ACTOR'S AND OBSERVER'S PERSPECTIVE IN NARRATIVE PROCESSING

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Shuo Zhou

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Shuo Zhou, Ph. D.

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An important difference in the way audience members understand story characters is whether they take an actor's or an observer's perspective, paralleling the role of an actor or an observer in social interactions. Social psychologists have long identified the actor-observer asymmetry in understanding social events (Jones & Nisbett, 1971; Malle, Knobe, & Nelson, 2007; Robins, Spranca, & Mendelsohn, 1996). However, how taking an actor's or an observer's perspective might influence understanding story characters has not been systematically examined, and there are no easy-to-use measures of these two narrative processing strategies.

Taking the social cognitive approach, this dissertation conceptually distinguishes the actor's from the observer's perspective in processing narratives and operationalizes actor-observer perspective (AOP) using multi-dimensional scales. Chapter 1 reviews the existing approaches to understanding how people process story characters in the communication literature and introduces the social cognitive approach of this dissertation. Chapter 2 distinguishes the actor's from the observer's perspective in processing narratives. An actor's perspective is conceptualized as simulating story events from the perspective of an actor actively participating in the behavior; an observer's perspective is conceptualized as simulating the story events as an onlooker who observes the character's behaviors and maintains a separate self-identify from the character. Chapter 2 further discusses the different indicators of actor's and observer's perspective. Chapter 3 examines the role of character morality in influencing actor-observer perspective through two studies. Study 1 focuses on the effects of character morality on egocentric projection and identification. Study 2 investigates how character morality influences

the type of explanations people use for character behavior. Findings suggest people tend to take an actor's perspective when interpreting moral characters, indicated by the higher level of egocentric projection onto the character, greater identification with the character, paying closer attention to their unintentional behaviors (e.g., running into the boss after work), and providing more external causes (e.g., character's specific situations) to explain these behaviors. In contrast, when processing immoral characters, people tend to take an observer's perspective by focusing more on intentional behaviors (e.g., cheating on an exam for a better grade). Chapter 4 proposes multi-dimensional measurements of actor-observer perspective (AOP). An exploratory factor analysis in Study 3 and a confirmatory factor analysis in Study 4 were conducted to explore and validate the AOP scales. Six indicators of AOP are identified—egocentric projection, understanding from the character's perspective, external attribution, capability explanation, internal attribution, and intention judgment. The former four indicate taking an actor's perspective, and the latter two indicate taking an observer's perspective. Using a persuasive narrative about food safety, Study 4 also found that the different indicators of actor's perspective are associated with different persuasive outcomes. Understanding from the character's perspective increased the audience's intention to perform safe food handling practices, whereas egocentric projection reduced such behavioral intention. The theoretical implications of actor-observer perspective in the psychology of narrative and the practical implications of the AOP scales are discussed.

Keywords: perspective taking, actor vs. observer, narrative processing, health persuasion, character morality, scale development

BIOGRAPHICAL SKETCH

Shuo Zhou was born in Beijing, China. She attended School of Journalism and Communication at Hong Kong Baptist University for her Bachelor's and M.Phil.'s degrees. As an undergraduate, she covered several major International events and was enthusiastic at interviewing people from all walks of life to write interesting stories. It was at that time she realized the critical impacts of narrative on changing people's beliefs and health behaviors. The strong interests in narratives, social cognition, and health drew Shuo to Cornell for graduate school where she has been guided and mentored by Prof. Michael A. Shapiro in pursuit of her Ph.D. in media psychology and health communication.

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Chapter 1: Introduction

Narrative is the simulation of social worlds (Schank & Abelson, 1995). Reading narratives is one way we develop understandings of social others (Oatley, 2016). Research has shown that the more people read fictions, the better their understandings of other people (Mar, Oatley, & Peterson, 2009; Fong, Mullin, & Mar, 2013; Kidd & Castano, 2013). However, readers differ significantly in how they process and understand story characters. In many ways, there are as many Hamlets as there are people reading about Shakespeare's character. When processing narratives, audience members may use a variety of mental strategies to interpret the characters' cognitions, emotions and behaviors.

In everyday social interactions, an individual can have two types of relationship with a behavioral event: either as an actor doing the behavior or as an observer witnessing others doing the behavior. These two different perspectives usually lead to distinct understandings of and explanations for the same event, identified as actor-observer asymmetry (also actor-observer bias) in social psychology (Jones & Nisbett, 1971; Malle, Knobe, & Nelson, 2007; Robins, Spranca, & Mendelsohn, 1996). This distinction is also supported by evidence from neuroscience studies which indicate that a person activates different brain areas as a performer of an action (being an actor) in a situation compared to when observing others performing the behavior (being an observer) (David et al., 2006; Decety, 2005; Decety & Sommerville, 2003; Ruby & Decety, 2004).

The actor-observer distinction in perceiving social events may also apply to story processing. Similar to real-world interactions, audience members may interpret the same character and event differently depending on which perspective they take. One possibility is that when understanding a story character, an audience member may mostly take an actor's

perspective in some circumstances—imagining story events from the perspective of an actor who actively engages in the behavior; in other circumstances, an audience member may mostly take an observer's perspective—understanding the story events by observing the actor's behaviors, and maintaining a separate self-identify from the character (Goldman, 2006). It is important to note that these two processes are not in opposition to each other. Audience members may use both perspectives in understanding a character (discussed in more detail below).

To understand the importance of distinguishing actor-observer perspective in narrative processing, it is necessary to review how scholars investigated narratives in the past, particularly the previous approaches to understanding how audiences interpreted story characters. By reviewing these approaches, we can form a clear picture of how the actor-observer perspective approach to narrative processing is different from and contributes to the existing narrative theories in the communication literature.

Existing Approaches to Understanding How People Process Story Characters

One major approach is to understand narrative as a form of entertainment media. Researchers in this domain are interested in questions such as why people consume narratives or select certain types of entertainment media (Bryant & Davies, 2006). Perceptions and evaluations of story characters are important because they have implications for various components of attraction (e.g., liking, perceived similarity, wishful identification), which help us understand how people get entertained by media stories (Hoffner & Cantor, 1991; Vorderer, Klimmt, & Ritterfeld, 2004). For example, disposition-based theories focus on how character morality is linked to enjoyment, claiming that audience members form affective dispositions towards characters that range from strong liking to strong dislike (Raney, 2004; Zillmann & Cantor, 1976). People will enjoy the narrative most when liked or moral characters receive positive

outcomes and disliked or immoral characters suffer. In other words, enjoyment is maximized when justice is done. Lee and Shapiro (2016) expand this line of research by identifying the role intentionality plays in making moral judgments of story characters.

To further address why people are sometimes attracted to sad stories or complicated story characters, Oliver and colleagues distinguish two types of motivations for consuming media entertainment—hedonic and eudaimonic motivations. Specifically, people with hedonic motivations seek for pleasure, whereas people with eudaimonic motivations seek for the truth of the world, the purpose of life, and virtue of human beings. Research findings show these two types of motivations are related to preference for different genres of media entertainment and different affective responses (Oliver & Raney, 2011; Oliver & Bartsch, 2011). People with high eudaimonic motivations are likely to have more meaningful affective experiences and elicit affects such as inspiration, awe, and tenderness rather than fun, pleasant or entertained. Another somewhat related approach draws on self-determination theory (Deci & Ryan, 1985), which studies media enjoyment as the satisfaction of people's intrinsic needs: autonomy, competency, and relatedness (Tamborini, Bowman, Eden, Grizzard, & Organ, 2010).

Another important approach focuses on narrative engagement. Among the various theorizations of narrative engagement (Busselle & Bilandzic, 2009), there are two distinct but closely connected forms of narrative engagement that are well-recognized: transportation (Green & Brock, 2000) and identification (Cohen, 2001; de Graaf, Hoeken, Sanders, & Beentjes, 2012; Hoffner, 1996). Transportation is a process in which an audience member, like a traveler, transports him/herself to the narrative world, rendering the real world less accessible (Gerrig, 1993). When transported, the entire story (including its characters, setting, and plot) absorbs readers' attention and emotions. Identification describes audience members' specific reactions to

story characters. Identification takes place when "an audience member imagines him- or herself being that character and replaces his or her personal identity and role as audience member with the identity and role of the character within the text" (Cohen, 2001, p.251). Identification has also been conceptualized as people's desire to become a certain character, which is labeled as wishful identification (Hoffner, 1996). Narrative engagement is considered the most important mechanism of narrative persuasion (Busselle & Bilandzic, 2008; Green & Brock, 2000; Slater & Rouner, 2002). Abundant evidence suggests that engaging in narrative messages may enhance message influence on people's beliefs, risk perceptions, behavioral intentions, and actual behaviors by attracting the audience's attention away from competing stimuli (Busselle & Bilandzic, 2008), eliciting more intense emotional reactions (Small, Loewenstein, & Strnad, 2006; Hoeken & Sinkeldam, 2014), reducing psychological reactance (Dal Cin, Zanna, & Fong, 2004; Zhou & Shapiro, 2017), and establishing connections between the story and the audience (Cohen, 2001; Hoffner & Buchanan, 2005).

The Social Cognitive Approach to Understanding Narrative Processing

Although both the media entertainment approach and the narrative engagement approach have enriched our understanding of how audience members react to story characters (Sood, Menard, & Witte, 2004), these approaches tend to emphasize the outcome of such reaction over the process of understanding characters. A social cognitive approach—and the one being taken here—looks at understanding narrative as an extension of how we judge people in daily life. Oatley (2016) understands narrative as "a set of simulations of social worlds that we can compare … with aspects of our everyday world, to suggest insights we might not achieve by looking with the single eye of ordinary perception" (p. 618). Just as we could practice flying skills in a flight simulator, reading narratives could be our mind's flight simulator improving our

social skills. Likewise, Zunshine (2006) conceptualizes narrative as a way to practice Theory of Mind (TOM), which is the cognitive capacity to ascribe mental states to oneself and others, attributing intentions, thoughts and feelings to the self or others to explain and predict behaviors. Our minds are eager to know other people's unobservable mental states, especially for story characters who are usually more interesting than most people in everyday life. Narratives provide readers an immersive and simulative experience of social interactions, which can improve the skills for social inference (Mar & Oatley, 2008; Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006). When reading a novel or watching TV programs, audience members need to keep track of the characters' goals, thoughts and feelings to understand their behavioral events and vicariously learn from their experience. Some people are more motivated to exert mental efforts to understand others' minds as a personal trait (Carpenter, Green, & Vacharkulksemsuk, 2016).

The current research is rooted in this social cognitive approach to understanding narratives and focuses on how people make inferences about a story character's mental states in specific story scenarios and interactions. I argue that narrative processing is not much different from trying to understand interesting people in real social interactions. Just as we could be either an active performer doing the action or an outside spectator observing the action in daily events, processing narratives turns each audience member into an actor and/or an observer, whether aware of it or not. We could take an actor's or an observer's perspective to interpret story character's mental states and behaviors. Findings in the social cognition literature show that actors and observers differ significantly in how they perceive social events: an actor focuses attention on the situational or impersonal factors that he/she is interacting with and an observer focuses attention on the stable personal factors (Heider, 1958; Jones & Nisbeet, 1971; Mall & Pearce, 2001). However, few studies have examined the distinctions between taking an actor's

and an observer's perspective in understanding story characters. This dissertation applying actor-observer differences from social cognition to the narrative context will fill this gap and provide new insights into understanding story processing.

The goal of this dissertation is to (1) conceptually distinguish actor's from observer's perspective in narrative processing (Chapter 2); (2) explore message features (i.e., character morality) leading to more or less actor/observer's perspective (Chapter 3); (3) develop measurements of actor-observer perspective (AOP) to operationalize the two types of perspective (Chapter 4); and (4) examine the key persuasion outcomes of actor/observer's perspective in health-related narratives (Chapter 4).

Chapter 2: Conceptualization of Actor's and Observer's Perspective in Narrative Processing

Accurately understanding others' thoughts, feelings, and intentions is critical in social life. "Perspective taking" is recognized as one mental strategy for understanding others' situations, minds, and actions. It generally refers to perceiving an event, a situation, an object, or a person from a point of view that differs from the perceiver's original point of view. However, perspective taking has several meanings in the literature and can be understood in different ways: as relying on one's own mental states to reason how another person experiences a particular situation (Davis, Conklin, Smith, & Luce, 1996), as egocentrically projecting one's own mental states and then making adjustments (Epley, Keysar, Van Boven, & Gilovich, 2004), as adopting the character's goals, thoughts, and feelings (Cohen, 2001), or as the cognitive capacity to consider different viewpoints (Galinsky, Maddux, Gilin, & White, 2008). Although researchers generally agree that perspective taking involves a switch from one's immediate perspective to a somewhat different perspective, it is less clear what kind and whose perspective people actually adopt.

The current dissertation focuses on two types of perspectives that audience members may take when processing media story characters: 1) from the perspective of an actor who performs the action described in the story, or 2) from the perspective of an observer who witnesses the actor performing the action described in the story. I will provide the rationale for this distinction below.

Evidence of Actor-Observer Differences in Social Cognition

The social cognition literature has long distinguished between actor and observer visual perspectives in perceiving social behaviors (Fussell & Krauss, 1989; Nigro & Neisser, 1983;

Sutin & Robins, 2008; Talarico, LaBar, & Rubin, 2004). An actor is the person who has the agency and actively engages in a behavior, focusing on the environment or objects that are interacting with the self (Malle, 2005); an observer is the person who objectively views the behavior from an outsider's perspective, focusing on the person who carries out actions and making a clear distinction between the self and the observed person (Decety, 2005; Jones & Nisbett, 1971; Nigro & Neisser, 1983).

The actor and observer roles are associated with differences in how actions are judged. For example, the classic attribution theory suggests actors tend to use situational factors to explain their behaviors whereas observers tend to use stable dispositional factors to explain the actor's behaviors (Frank & Gilovich, 1989; Jones & Nisbett, 1971; Storms, 1973). Malle and colleagues further investigate the actor-observer asymmetry in attribution based on folk-conceptual theory. They posit actors pay closer attention to unintentional events and observers pay closer attention to intentional events (Malle & Knobe, 1997). In addition, compared to being an observer, being an actor leads to closer perceived psychological distance to the behavioral event (Libby, Shaeffer, & Eibach, 2009). Actors tend to focus more on specific processes of how the action is performed, whereas observers tend to focus more on the broad goals of the event, such as why the event happens and what are its effects.

In real social interactions, people can temporarily mentally switch their roles as an actor or observer. For example, when observing social others' behaviors, people may hypothetically imagine oneself rehearsing the same behavior or envision one's own consequences while performing the behavior. This vicarious learning process (Bandura, 1965, 2002) suggests people have the cognitive capacity to project oneself into another person's situation and experience what it would be like in that situation, shifting one's role from an observer to an actor. Another

circumstance is when we retrieve autobiographic memories and construct personal memories from an observer's points of view (Nigro & Neisser, 1983), shifting one's role from an actor to an observer. Similar to film actors/actresses watching their own films, we sometimes retrospect what we did in the past, build mental imageries of our own behaviors, and "see" ourselves as if we were another person. These possibilities of switching the role of an actor and an observer suggest that the actor-observer distinction is not simply a result of different identities or visual perspectives in social interaction, but more importantly, relates to two distinct mental inference strategies depending on whether the perceiver takes an actor's or observer's perspective.

Distinguishing Actor's from Observer's Perspective in Narrative Processing

Making judgments about story characters is psychologically similar to making judgments about social others (Reeves & Nass, 1996). In fact, many studies in the social cognition literature use stories to simulate real world actor-observer situations (i.e., Jones & Harris, 1967; Karasawa, 1995; Malle, Knobe & Nelson, 2007). For example, actor's perspective is manipulated by instructing participants to tell their personal stories of performing a behavior. In the observer's condition, participants listened to the previously recorded actor's story (Malle, Knobe & Nelson, 2007, Study 6).

When applying the actor-observer distinction in social interaction to story processing, we should note that by default an audience member is an observer external to the story events. This is because a story is usually about another person who has a different temporal and spatial framework and different goals from the audience member. Also, audience members may get access to more or less information about the depicted situation than the character (Carroll, 2011). For example, when watching the movie Jaws, audience members know a killer shark is nearby whereas the swimmers do not realize this risk (Goldman, 2006). So although audience members

could understand what the characters in the movie are thinking and feeling, typically they do not adopt the same perspective as the characters who participate in the story event (Coplan, 2004). In this process, an audience member maintains a separate identity and a degree of detachment from the character (Coplan, 2004; Decety & Jackson, 2004; Goldman, 2006). According to Carroll (2011), "We respond to fiction from outside. Our point of view is that of an observer of a situation (p. 311)". Similarly, Currie (1997) advances the hypothetical-observer-of-fact theory, suggesting audience members of narratives usually take the perspective of a hypothetical person who observes the story events as facts. This hypothetical-observer perspective is different from audience members' immediate real life perspective because the story scenes are not happening in real life at that particular moment.

Another way of shifting perspective from the immediate environment to an imagined environment depicted in a narrative is that audience members enter the story event as an actor, simulating the events from the view of the actor doing the action and interacting with other objects, as if they were right there in the event—putting the self in another person's shoes (Galinsky & Ku, 2004). In this circumstance, audience members will not see the self or the character in the scene. Instead, they focus attention on the situation and the objects that they are interacting with.

Elements of Actor-Observer Perspective in Narrative Processing

Egocentric projection. One element of taking an actor's perspective in narrative processing is to project what audience members think their own thoughts and feelings would be in the story scenario onto the story character's thoughts and feelings in that situation (Epley, Keysar, Van Boven, & Gilovich, 2004), which is called "egocentric projection". For example, when playing chess, one strategy players may use to predict the opponent's movements is by

imagining what decisions the player would make if in the opponent's position. Egocentric processing appears to be a starting place when making mental inferences and varies with motivation and ability to make adjustments. People tend to maintain the initial egocentric perspective if there is a low level of motivation or no need (e.g., high perceived similarity between self and another person) to make an adjustment or could not recognize that other people may think differently (Epley et al., 2004; Van Boven & Loewenstein, 2005). By egocentrically projecting their own thoughts and feelings onto a story character's mind, people imagine the self as the actor actively engaging in story events in the depicted scenarios (Ames, 2004a, 2004b). Therefore, egocentric projection reflects the extent to which an audience member takes an actor's perspective.

Understanding from the character's perspective. While egocentric projection captures how much the audience member shapes the character to match his/her own thoughts and feeling, communication scholars have often focused on how the character's thoughts and feelings influence the audience member. The second element of actor's perspective in narrative processing: "understanding from the character's perspective" is rooted in the conceptualization of identification by Cohen (2001), which is defined as an imaginative process through which audience members mentally simulate the character's activities in the narrative, imagine what the character (rather than the self) is thinking and feeling, and share the character's goals, thoughts, and emotions (Batson, 2009). For example, identifying with movie heroes who saved the world may induce audience members to engage in prosocial behaviors, internalizing the same goal as the hero's. Through identification, audience members exercise intersubjective sharing of mental experience (Zlatev, Racine, Sinha, & Itkonen, 2008), enabling the reader to take an actor's role

by vicariously engaging in other's experiences. Therefore, conceptually, identifying with the story character indicates a higher level of taking an actor's perspective in narrative processing.

Although greater egocentric projection and greater identification with story characters are both associated with greater actor's perspective, there are important differences in the underlying processes. Egocentric projection is a relatively fast and intuitive way of making mental inferences about the behaviors of other people. It activates a perceiver's own way of thinking and projects it to the character. Identification, however, is a process in which people simulate the character's rather than one's own mental states. When identifying with a character, an audience member temporarily deactivates her/his own mindset and adopts the character's thoughts and feelings, making the audience member more like the character. Therefore, conceptually the direction of influence for egocentric projection is from the self to the character while understanding character perspective/identification is from the character to the audience member.

In the later part of this dissertation, I use "understanding from the character's perspective" rather than "identification" to label this element of actor's perspective taking to avoid confusions in the conceptualization and operationalization of identification. First, the concept of identification has different meanings in the communication literature—identification as an imaginative process (Cohen, 2001), as empathy and merging (Oatley, 1999), as a wishful identification (Feilitzen & Linne, 1975; Hoffner & Buchanan, 2005), as perceived similarity with the character, or as an intimate relationship with the character. Second, operationally, the scale of identification loads differently depending on the stimulus material (Campbell & Barrow, 2004). Some identification items emphasize merely understanding the character's view (e.g. "I think I have a good understanding of character X); other items emphasize taking the character's view by

feeling and thinking the same as the character (e.g. “While viewing the show, I could feel the emotions character X portrayed”; “While viewing the program, I felt as if I was part of the action). If people identify with a character because of shared similarities but without any motivation to recognize the difference between the character and the self, or without any concern for other people, it may lead to egocentric considerations and projecting one’s mental states to others’ minds.

To clarify, understanding from the character’s perspective specifically refers to simulating the story character’s situation and imagining the character’s mental states in that situation. Together with egocentric projection, they are the indications of the actor’s perspective.

Behavioral explanation. The actor and observer perspectives lead to differences in how attention is allocated and how attributions of behavioral events are made. Malle (1999) posits that an actor needs to continuously monitor the surrounding situation within which he/she performs behaviors. Therefore, actors are more attentive to their own unintentional actions because these behaviors are less controllable. Intentional actions are driven by their own needs and desires and are more or less automatically performed, so actors do not need to consciously monitor one’s own goals and intentions while performing behaviors (Norman & Shallice, 1986).

On the other hand, one goal for an observer is to infer his/her communication partner’s goals and intentions, which can ultimately facilitate ongoing interactions (Goffman, 1974). So other people’ intentional actions are particularly relevant to an observer’s communication goals, and observers usually pay more attention to intentional behaviors which carry more informational value and are more likely to bring threats or benefits to them (Malle, 1999). Of course, audience members don’t usually anticipate interacting with a story character, but as posited in the Media Equation (Reeves & Nass, 1996) people typically use the same mental

strategies to process media that they use to process other social actors in real life. This is also supported by research on parasocial interaction, in which audience members develop a one-way relationship with media characters, extending the media experience to real life relationships (Cohen, 2014; Klimmt, Hartmann, & Schramm, 2006; Tsay & Bodine, 2012). So we could anticipate that audience member's thinking would tend to correspond to the actor and observer roles even for vicarious experiences.

Intentional behaviors are usually explained by "reasons" related to personal dispositions or motivations, whereas unintentional behaviors are explained by impersonal "causes". There are two typical kinds of reasons to explain intentional behaviors—causal history of reasons and subjective reasons. "Causal History of Reasons" (CHR) corresponds to traditional attribution factors including stable dispositions and situational factors. These are factors lying in the background of reasons. CHR precedes reasons and clarifies how these reasons came about. Malle (1999) labels the second kind of reasons "subjective reasons" reflecting people's desires, beliefs, and values. These inner states are combined to form certain intentions, which ultimately lead to intentional acts. For example, a "causal history of reason" explanation for why a character helped someone whose bicycle chain was jammed could be that he/she is a nice person (a disposition). On the other hand, if the character expects some kinds of reward for being helpful that would be a "subjective reason" reflecting his/her desires and intentions.

Unintentional behaviors usually are not consciously performed with a goal or plan in mind (Malle & Knobe, 1997); thus, it makes no sense to attribute them to reasons. People tend to rely on mechanical causes that brought about the unintentional behaviors as explanations. "Mechanical cause" explanations refer to using impersonal factors that are external to an actor to

explain the actor's behaviors. For example, a character helped someone fix his bicycle chain because the chain is jammed or because the character happened to have the tools with him/her.

Linking these different types of explanations to actor/observer's focus of attention, actors tend to focus on unintentional behaviors and use "mechanical causes" to explain these behaviors whereas observers tend to focus more on intentional behaviors. Since actors have more access to their own beliefs, values, and desires compared to observers and want to justify their behaviors, actors tend to use more "subjective reasons" to explain their intentional behaviors. In contrast, observers usually do not have access to an actor's internal states, so observers tend to use more "causal history of reasons" over "subjective reasons". Overall, among the different types of explanations, relying more on the "mechanical causes" and "subjective reasons" indicates an actor's perspective, whereas relying more on "causal history of reasons" and "intentional behaviors" indicates an observer's perspective.

Therefore, I propose actor-observer perspective is a multi-dimensional concept that has multiple elements: (1) Imagining one's own mental states in the simulated situation and projecting them to the character, which is labeled "egocentric projection". Greater egocentric projection indicates an actor's perspective. (2) Understanding from the character's perspective, which indicates an actor's perspective. An actor's perspective also includes elements of explaining behaviors using (3) mechanical causes and (4) subjective reasons. An observer's perspective includes elements of explaining behaviors using (5) causal history of reasons and (6) intention judgment.

The current study does not intend to conceptualize actor's perspective and observer's perspective as the two extremes on the same continuum. In fact, they should not be operationalized by one single scale because although they represent different ways of

understanding story characters, they are not necessarily mutually exclusive processes. It may oversimplify the mechanisms of actor-observer perspective if we consider them as opposed to each other. People can have low levels of both actor's and observer's perspective because they have no interest in understanding the character at all, or simply apply existing stereotypes or direct perception to interpret character's behaviors without involving any types of perspective taking processes. In addition, the elements proposed above focus on audience's general perspective taking experience in processing the whole story rather than moment-to-moment tracking of audience's perspective taking strategies. Audience members may switch their way of perspective taking during narrative processing—taking an actor's perspective at some moments and an observer's perspective to interpret the same character at other moments. Therefore, although the six elements may be somewhat related, each of them functions as a unique mechanism of the actor-observer perspective.

Based on this conceptualization, I will further explore the determinants and consequences of taking an actor or an observer perspective in processing narrative messages in the following sections.

Chapter 3: Factors Influencing Actor-Observer Perspective and the Effects of Character Morality

To understand how the actor's and observer's perspective plays a role in story comprehension, it is important to identify what are the determinants of taking an actor's or an observer's perspective in narrative processing. Research on attribution indicates that the mental strategies people use in social judgments depend on the observed person's perceived morality (Brambilla & Leach, 2014; Reeder & Spores, 1983). Extending this to how audiences judge story characters, in this chapter, I investigate the effects of character morality on the different aspects of actor-observer perspective. Based on the conceptualization in Chapter 2, there are six related but distinct elements of actor-observer perspective in understanding story characters: (1) egocentric projection onto the character, (2) understanding from the character's perspective/identification, explaining behaviors with (3) mechanical causes, (4) subjective reasons, (5) causal history of reasons and (6) making intention judgment. Through two studies (Study 1 & Study 2), this chapter provides empirical evidence explaining how character morality influences each of these elements and whether processing moral characters leads to taking the actor's perspective compared to processing immoral characters.

Background

Previous research has shown that the temporal and geographic distance of the event, perceived similarity with the story character, and narrative point-of-view all influence which type of perspective people are likely to take. Studies found that people tend to recall their recent memories from the actor's perspective and recall distant memories from the observer's perspective (Berntsen & Rubin, 2006; Nigro & Neisser, 1983; Talarico et al., 2004); describing actions more abstractly makes people more likely to picture the actions from the third-person

perspective (Libby, Shaeffer, & Eibach, 2009); processing a character that is similar to the self can prompt people to take an actor's perspective in interpreting the character's mental states, regardless of whether the perceived similarity naturally occurs (e.g., similar identity or membership, Ames, 2004a; Kaufman & Libby, 2012; Van Boven, Loewenstein, Dunning, & Nordgren, 2013) or manipulated (e.g., similar personal traits, Houston, 1990; Krebs, 1975); and first person narratives using first-person (I) and second-person (you) pronouns make people more likely to comprehend the event from an actor's perspective, and third person narratives using third-person pronouns (he/she) are more likely to induce understandings from an observer's perspective (Brunyé et al., 2009).

We should note that the major differences between real social interactions and media narratives derive from the features of the narrative message. If the actor-observer distinction from the social cognitive literature can be applied to processing narratives, some narrative-related features should influence the audience member to take more of an actor's or more of an observer's perspective.

An important message factor regarding features of story characters is character morality. People are particularly concerned with attributes of morality when forming impressions of media characters and people in real life (Brambilla, Sacchi, Rusconi, Cherubini, & Yzerbyt, 2012; Goodwin, Piazza, & Rozin, 2014; Raney & Bryant, 2002; Wojciszke, Bazinska, & Jaworski, 1998). To avoid potential harms from evil people and to seek for opportunities and help from kind people, people need to make moral judgments about others' moral status in real social interactions. Similarly, when processing stories, it is audience's primary goal to determine whether the character is good or bad. Audience members are "untiring moral monitors" who keep track of the moral correctness of a character's actions (Zillmann, 2000). In the media

psychology literature, a story character's morality has been linked to many aspects of media experiences, including audience members' affective disposition toward the character (Zillmann, 2000; Zillmann & Bryant, 1975), enjoyment of the media content (Raney, 2004, 2006; Tsay & Krakowiak, 2011), perceived similarity between the self and the character (Grubb & Harrower, 2008), parasocial relationship (Hoffner, 1996), and identification with the character (Tal-Or & Cohen, 2010).

However, insufficient attention has been paid to the mental processes and mental inference strategies audience members use to understand moral or immoral media story characters. Although extensive research has done in the area of media entertainment to investigate how people psychologically react to characters, its emphases are on how people judge the morality of the character, how people develop feelings towards or form affiliations with moral or immoral media characters and why people enjoy stories based on such affiliations (Raney, 2004). When morality is judged, how they interpret characters' mental state and subsequent behaviors are less known.

Effects of Character Morality on Actor-Observer Perspective

Although there is no direct evidence of the relationship between character morality and actor-observer perspective, some studies are informative about how the moral status of a character influences the way she/he is perceived. First, the moral status of a character is an important source for forming affective dispositions toward a character. Affective disposition refers to feelings that viewers hold toward characters (Raney, 2004), i.e., "liking" or "disliking". According to disposition-based theories of story processing, audience members generate positive feelings (i.e., liking) toward characters who behave morally and negative feelings (i.e., disliking) toward characters who behave immorally, in a relatively intuitive and automatic way (Raney,

2004). Motivated by the need for social connectedness and self-serving purposes, people wish to share more similarities with the desirable characters and become psychologically closer in relationship with liked characters (O'Brien & Ellsworth, 2012; Robbins & Krueger, 2005). Actor's perspective taking enhances merging between the self and the character. Therefore, readers are motivated to take an actor's perspective when processing a liked moral character, egocentrically projecting one's own traits and mental states onto the liked character, or temporarily exchanging identity with the liked character and adopting what the character is thinking and feeling (McPherson Frantz & Janoff-Bulman, 2000). At the same time, people want to distance themselves from immoral characters. So I predict processing moral characters will boost actor's perspective whereas processing immoral characters will enhance observer's perspective.

Second, character morality also influences audiences' judgment about the intention of an action. According to the Knobe Effect (Knobe, 2003), moral actions are more likely to be judged as unintentional while immoral actions are more likely to be judged as intentional (for a review see Lee & Shapiro, 2014). Since actors tend to look more at unintentional behaviors to explain events while observers tend to look more at intentional behaviors (Malle & Knobe, 1997), this suggests interpreting a character's moral behaviors would be more associated with actor's perspective whereas immoral behaviors would be more associated with observer's perspective.

Character morality on egocentric projection. People are more likely to egocentrically project onto a similar character compared to dissimilar characters (Ames, 2004b). People see themselves as more similar with desirable characters who engage in moral behavior and want to build closer relationships with moral characters (O'Brien & Ellsworth, 2012; Robbins &

Krueger, 2005). This similarity motivates audience members to project their own thoughts and feelings onto moral characters when interpreting their actions. Therefore, I propose

H1: Participants are more likely to egocentrically project their own thoughts and feelings when processing stories of moral characters than of immoral characters.

Character morality on identification/understanding from the character's perspective. While egocentric projection is a measure of how much people assume another person would think the same way they would in a situation, the "identification" tradition sees perspective taking as a kind of simulation of events from the character's perspective. Although greater egocentric projection and greater identification with story characters are both associated with greater actor's perspective, there are important differences in the underlying processes. Egocentric projection is a relatively fast and intuitive way of making mental inferences about the behaviors of other people. It activates a perceiver's own way of thinking and projects it to the character. Identification, however, is a process in which people simulate the character's mental states, rather than one's own. When identifying with a character, an audience member temporarily deactivates her/his own mindset and adopts the character's thoughts and feelings. Therefore, the direction of influence for egocentric projection is from self to character while identification is from the character to the audience member.

Sullivan and Venter (2005) found one's self-descriptions have greater overlap with representations of heroes compared to non-heroes, suggesting a tendency of wishfully including positive characteristics into the self and identifying with the heroic characters. Similarly, vicariously exerting a superhero's power through video game playing could promote prosocial behaviors in real life (Rosenberg, Baughman, & Bailenson, 2013), which indicates that people

are likely to internalize the perspectives of superheroes or moral characters and merge with their identities. Therefore, I propose

H2: People will have a higher level of identification with the character when processing stories of moral characters than immoral characters.

Character morality on behavioral explanations. For several decades, investigators have known that people make different judgments about the causes of social behaviors depending on whether they are taking an actor's or an observer's role. Falling generally under the label "attribution theory" (also correspondence bias), the general picture is that people are more likely to think their own negative actions are a consequence of situations but others' negative actions are a consequence of disposition—the reverse being true for positive actions (Gilbert & Malone, 1995).

Malle and Knobe (1997) recently suggested that these causal attribution judgments are more complex than previously described by attribution theory. Malle advances a folk-conceptual theory in which the intentionality of the action is an important factor. As explained in Chapter 2, an actor needs to continuously monitor the surrounding situation within which he/she performs behaviors. Therefore, actors are more attentive to their own unintentional actions because these behaviors are more salient in their minds (Malle, 1999). Intentional actions are driven by actors' own needs and desires and are more or less automatically performed, so actors do not need to consciously monitor one's own goals and intentions while performing the behaviors (Norman & Shallice, 1986). In contrast, other people' intentional actions are particularly relevant to an observer's communication goals, carry more informational value, and are more likely to bring threats or benefits to them. So observers usually pay more attention to intentional behaviors (Malle, 1999).

Since people perceive themselves to have closer relationships and shared mental states with moral characters, they are more likely to take an actor's role (versus observer's role) when inferring moral character's mental states and explaining their behaviors. Taking into consideration of both the folk-conceptual theory of behavioral explanation and the literature regarding the relationship between character morality and actor-observer perspective, I hypothesize when processing moral characters, audience members may focus more on the characters' unintentional behaviors; when processing immoral characters, audience members may focus more on the characters' intentional behaviors.

H3: When processing stories of moral characters, people attend more to unintentional activities of the character than intentional activities; in contrast, when processing stories of immoral characters, people attend more to intentional activities of the character than unintentional activities.

Since mechanical causes are the only type of explanations for unintentional behaviors, actors overall use more mechanical causes to explain behaviors than observers. When processing moral characters, people are motivated to take an actor's perspective, attending more to the characters' unintentional behaviors and consequently, rely on mechanical causes to explain moral character's behaviors.

In contrast, audience members are more likely to take an observer's perspective when understanding immoral characters in order to distance the self from the immoral character. The folk-conceptual theory of behavioral explanations suggests observers pay more attention to intentional behaviors than unintentional behaviors and use less mechanical causes to explain behaviors in general (Malle, 1999). Therefore, I propose

H4: People are more likely to provide mechanical causes to explain moral character's behaviors than immoral character's behaviors.

According to the folk-conceptual theory of behavioral explanation (Malle, 2005), intentional behaviors are usually explained by "causal history of reasons (CHR)" related to personal dispositions or "subjective reasons" related to motivations. Actors are more likely to offer subjective reasons than CHRs. This is because actors have higher accessibility to their beliefs, values, and desires compared to observers. Actors also want themselves to appear rational for engaging in an action by offering subjective reason explanations (Malle, Knobe, O'Laughlin, Pearce, & Nelson, 2000) while observers may prefer using causal history of reasons to explain others' behaviors by focusing more on their dispositional features than motivations. For example, a helping behavior explained by an actor might be more likely to be "because I want to help the person in need" (subjective reasons), whereas an observer might be more likely to explain "because she is a nice person" (CHR). Therefore, I propose

H5: People are more likely to provide subjective reasons to explain moral character's intentional behaviors than immoral character's intentional behaviors.

H6: People are more likely to provide causal history of reasons (CHR) to explain immoral character's intentional behaviors than moral character's intentional behaviors.

Two studies were conducted to examine the effects of character morality on egocentric projection and identification (Study 1) and how audience members generate different patterns of behavioral explanations (Study 2) when processing moral and immoral characters. One concern is answering either the open-ended questions about behavioral explanations or the close-ended questions about projection or identification first might influence responses to the other part of the study. Therefore, I tested perspective taking indicated by egocentric projection and identification,

and behavioral explanations separately using different groups of subjects through two studies. These studies present the first attempt to link a character's morality to mental inference strategies about character behavior.

Study 1

A randomized experiment was conducted to examine the influences of a character's morality on actor-observer perspective, using a 2×2 (Story [Steve/Alice] × Morality [moral/immoral]) between-subject factorial design. Audience's level of egocentric projection and identification were measured as the dependent variables reflecting the tendency to take an actor's perspective.

Method

Participants

One hundred and sixty-four adult American participants were recruited through Amazon's Mechanical Turk and directed to our experiment conducted on Qualtrics.com. The participants were required to be native English speakers located in the USA, and have a high Mturk approval rate (>95%) to ensure the quality of their responses. Participants who completed the study had thirty cents deposited in their Amazon accounts through Mturk. The average time for completing the study was around 5 minutes, and 2 1/2 minutes was considered the minimum time it would take to listen to, read, and respond to the study. Two participants took less time, and another two participants did not fully complete the study. I removed these participants resulting in a final analytic sample of 160 participants. The sample contained 48.5% male participants and 51.5% female participants. The majority of participants were non-Hispanic White (53.8 %), followed by Asian (26.9%), African American (11.3%), Native American (3.1%), Latino (1.9%), and others (3%). The average age of participants was 34.

Story Stimuli

Two different stories (Alice's and Steve's) were used to test the hypotheses. However, it is not intended as a manipulation of story context. The goal is to examine the generalizability of the proposed theories and whether the same conclusions could apply to stories varying in characters and contexts. Since this is not a factor of focus in this study, its effects are discussed in the post-hoc analysis.

The Alice story took place on campus, and the Steve story was a working scenario. Detailed descriptions of the stories are provided in the next section. Using two stories with different characters and storylines gives some assurance that any effects of morality (manipulated somewhat differently in each story) on perspective taking are not unique to a particular story. I purposely used one male character and one female character to reduce the possibility of our results being a function of effects related to gender, such as gender identification.

Procedure and Manipulations

Each participant was randomly assigned to listen to and later answer questions about one of the four stories (Steve moral: 1min 32s; Steve immoral: 1min 33s; Alice moral: 1 min 05s; Alice immoral: 1 min 09s). Using audio stories made it less likely participants could skip reading the story and also controlled for differences in reading speed. Each story began with the morality manipulation event in which Steve or Alice was described as intentionally doing something morally positive or morally negative in the past. Transcripts of the story stimuli are provided in Appendix A. Following the manipulation event, participants listened to an ambiguous event in which Steve or Alice got involved unintentionally.

Character's morality. Morality was manipulated by depicting whether the character intentionally did a morally good or bad thing. The story depicting Steve as a moral character first described him voluntarily tutoring for a math class to help the students get better grades, while the story depicting Steve as an immoral character described him selling test answers for a math class to make money. The story depicting Alice as a moral character first described her voluntarily helping her weaker classmates with their chemistry lab experiments resulting in a higher average grade, while the story depicting Alice as an immoral character described her manipulating a chemistry lab to lower her classmates' grades and make her grade higher. The unintentional event for Steve described him encountering his boss who asked about their work team's progress. The boss was very impressed and hinted that Steve had a great chance for promotion. The unintentional event for Alice described her encountering her professor whose bicycle chain had jammed. She helped the professor fix the chain, and the professor was very grateful for her help. The stories and questions were adapted from Ames' study (Ames, 2004a). Full versions of the stories are available from the first author.

After listening to the story, participants watched a 45-second distractor video introducing how to clean burned-on food off a pot. They were instructed to count the number of times "yellow gloves" appeared on the screen and the number of times the narrator mentioned "baking soda". The purpose of the distractor task is to engage participants' attention away from the main task and ensure responses are not just dependent on short-term memory.

Measures

In Study 1, I focused on identification and egocentric projection.

Egocentric projection. I modeled Ames' (2004a) method by using eight items to measure participant's assessment of the character's mental states and then using parallel

questions about the participant's assessment of their own mental state if they were in the same situation as the character. The presentation order of the questions within each type of question was randomized. Examples of the questions rating the character were: "Steve wanted to share credit with the others"; "Steve believed this was a great opportunity to advance his career"; "Steve didn't really care what happened to his teammates"; "Alice hoped she would get a better grade for helping"; "Alice was sad to see someone struggling"; "Alice thought the professor was dumb for not being able to fix the bike alone".

The questions were modified for participant's assessment of their own mental state if they were in the same situation as the character. For example, "I would believe this was a great opportunity to advance my career" and "I would not really care what happened to my teammates".

To obtain a measure of egocentric projection, the correlation coefficient between the eight judgments about the character and the eight parallel statements about the self was used. Higher values indicate greater egocentric projection. This measure is validated by Ames (2004a) and applied in other studies (Zhou & Shapiro, 2014).

Identification. Identification was measured with 5-item identification scale (Tal-Or & Cohen, 2010). Items include statements about understanding the character, understanding the events in a way similar to the character, having similar feelings to the character, being able to get "inside the character's head", and understanding why the character did what he did. For example, "During reading, I could really 'get inside' Alice's head", "I felt like Alice felt" and "I tend to understand why Steve did what he did". Participants rated to what extent they agreed or disagreed with each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Responses were averaged into an identification scale (Cronbach's $\alpha = .82$; $M = 4.91$, $SD = 1.11$).

Manipulation Check

A pretest was conducted among 60 participants. Each participant read one story about Steve and one story about Alice. One of the stories was randomly assigned to be the moral version, and the other was the immoral version. I compared participants who read the moral story for that character to the participants who read the immoral story for that character. Independent sample t-tests showed for both Steve and Alice's stories, the characters manipulated to be more moral were indeed judged more moral (M_{Steve} = 5.53, SD = 1.03; M_{Alice} = 6.18, SD = .72) than when the character conducted immoral behaviors (M_{Steve} = 3.44, SD = .99; M_{Alice} = 3.08, SD = 1.02), t_{Steve} (58) = -7.99, $p < .001$, t_{Alice} (58) = -13.42, $p < .001$, indicating that the morality manipulation worked.

Results

Study 1 tested hypotheses 1 and 2, which predict that people are more likely to egocentrically project their own thoughts and feelings to the character (H1) and identify with the character (H2) when processing stories of moral characters than of immoral characters. The result of a t-test showed a significant main effect of morality on the level of egocentric projection, t(161)=-3.42, p=.001. People tend to project themselves more onto moral characters (M = 0.47, SE=.05) than immoral characters (M = 0.20, SE=.06). Therefore, hypothesis 1 is supported.

As for identification, there was a main effect of character morality on identification with the character, t(158)=-2.41, p = .017. People will have a higher level of identification with moral characters (M = 5.18, SE=.12) than immoral characters (M = 4.76, SE=.13). Thus hypothesis 2 is supported.

Egocentric projection and identification were modestly related, r(158) = .27, p = .001.

Post-hoc Analysis

A 2 (Morality: moral vs. immoral) ×2 (Story: Alice vs. Steve) ANOVA was performed to test whether different stories will influence the effects of morality on egocentric projection and identification. Treating the two stories as a between-subject factor eliminated the possibility of carry-over, practice and sensitization effects at the cost of some statistical efficiency—motivating a somewhat larger number of participants (Greenwald, 1976). This is a more conservative approach to test generalizability compared to within-subject experimental designs.

There was a trend for story context to influence egocentric projection, F (1, 156) = 3.59, p = .06, η^2_p = .02. People were somewhat more likely to egocentrically project onto Alice's story (M = 0.41) than Steve's story (M = 0.26). But the interaction of morality and story context on egocentric projection was not significant, F (1, 156) = 0.46, p = .50, η^2_p = .003.

There was no main effect of story context on identification, F (1, 156) = 0.02, p = .88, η^2_p < .01. Its interaction effect with character morality on identification was also not significant, F (1, 156) = 1.84, p = .18, η^2_p = .01. These results indicate that the impacts of character morality on egocentric projection and identification with story characters hold across different story contexts and with different story characters. The findings are largely generalizable.

Discussion

In Study 1, participants were more likely to egocentrically project their own mental states onto moral characters and to identify with moral characters. One interpretation is that an audience member processing a moral media character is more likely to take an actor's (as opposed to observer's) perspective than when processing an immoral media character. These findings indicate that how an audience member understands a media character depends on the character's moral status. As the first attempt to examine the influence of character morality on

actor-observer perspective, this study contributes to a better understanding of the role of character morality in narrative processing and conditions under which people would use different mental inference strategies to understand a media character.

However, the literature on actor-observer asymmetry indicates that whether an audience member sees himself as an actor or observer also influences the kinds of explanations that the audience member looks for to explain the causes of a character's behavior. To further explore effects of the moral status of a story character, I conducted a second study focusing on the impact of character morality on audience members' explanations for the character's behavior.

Study 2

Method

Participants

One hundred and ten adult American participants were recruited through Amazon's Mechanical Turk using the same recruiting criteria as in Study 1 and again directed to the experiment on Qualtrics.com. I checked participants' Mturk ID to make sure participants in Study 1 did not participate in the second study. I excluded four participants who entered irrelevant information in the thought-listing task (careless participation), and two participants who didn't complete the questionnaire. The sample contained about the same number of males (49.8%) and females (50.2%). The majority of participants were non-Hispanic White (62.6%), followed by Asian (21.6%), African American (8.7%), Latino (2.7%), Native American (1.7%) and other (2.7%). The average age of participants was 35.

Procedure and Manipulations

Study 2 followed similar procedures and used the same stimulus materials as in Study 1, but had different measures. After listening to the stories, participants were instructed to answer a

series of open-ended questions, including recall of the main behavioral event of the story, and explaining why the event took place.

Measures

Behavioral explanations. How people explained character's behaviors were captured through open-ended questions. Participants were instructed to recall the story about Alice or Steve. First, they needed to identify and briefly describe the main behavioral event (only one event), and then explained in detail why Steve/Alice did that. Participants' responses were coded by a team of three undergraduate research assistants. Each behavioral event identified was coded into two categories: intentional or unintentional. Since each story is composed of two behavioral events, starting with the morality manipulation event in which Steve or Alice intentionally did something moral or immoral and followed by an event in which Steve or Alice got involved unintentionally, if participants identified the morality manipulation event as the main behavioral event, it was coded as "intentional" and if participants identified the other event as the main behavioral event, it was coded as "unintentional". Subjects' explanations were counted into three categories based on Malle's (2014) online coding scheme: the number of (1) mechanical causes (e.g., Alice helped the professor because she saw him in trouble with the bicycle; Steve told the boss about their team's solution because the boss asked him); (2) subjective reasons (e.g., Alice wants to leave a good impression to her professor; Steve wanted to get a promotion); (3) causal history of reasons (e.g., Alice is a nice person; Steve is hardworking). Coders double-coded half of all the thoughts. The inter-coder reliability of each coding decision was acceptable (Krippendorff's $\alpha_{event} = 1$; Krippendorff's $\alpha_{cause} = .87$; Krippendorff's $\alpha_{reason} = .68$; Krippendorff's $\alpha_{CHR} = .83$). Coders discussed and resolved all the disagreements. In general, subjective reason explanations ($M = .47$, $SD = .61$, n = 49) were most frequently mentioned by respondents.

Results

Event identification. To test our third hypothesis that people attend more to unintentional events when processing moral characters and intentional events when processing immoral characters, I conducted a Chi-square test since both the dependent variable "event identified" (intentional vs. unintentional) and the independent variable character morality (moral vs. immoral) are dichotomous variables. Chi-square analysis revealed a significant main effect of character morality, χ^2 (1, N=103) = 18.47, $p < .001$. Specifically, as shown in Figure 1, when people processed moral characters, they were more likely to attend to unintentional events (78%) than intentional events (22%). In contrast, when people processed immoral characters, they allocated more attention to intentional events (64%) than unintentional events (36%). Therefore, hypothesis 3 is supported.

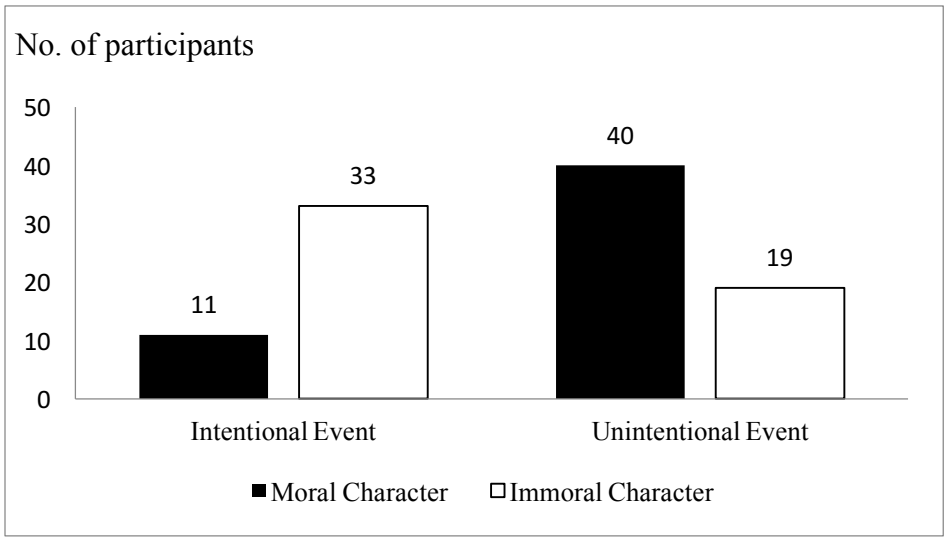

Figure 1. Effect of Character Morality on the Type of Event Identified (Study 2)

Cause explanations. The fourth hypothesis posits that people are more likely to provide mechanical causes to explain a moral character's behaviors than an immoral character's behaviors. As predicted, results showed a main effect of "morality" on the number of cause explanations provided, F (1,100) = 14.81, $p < .001$, $\eta^2_p = .13$. Audience members provided more

cause explanations for moral characters (M = .45, SE = .06) than immoral characters (M = .11, SE = .06). Thus, hypothesis 4 is supported.

Subjective reason explanations. Since it does not make sense to explain unintentional events with reason explanations, I only included participants attending to intentional behaviors, resulting in an analysis with considerably fewer participants than other analyses. Results show the main effect of "morality" on the number of subjective reason explanations was not significant, F (1,40) = 3.03, p=.09, η^2_p =.07, rejecting hypothesis 5. However, interpretation of this null effect should keep in mind that the coding strategy may not be reliable and sensitive enough to measure participants' subjective reasons for such a small sample size. Indeed, a power analysis indicated this analysis is under powered (1 - β = 0.40). It merits further exploration on how to measure subjective reasons and how it is influenced by character morality.

Causal history of reason (CHR) explanations. Similar to reason explanations, I only included participants attending to intentional behaviors in this analysis. Hypothesis 6 predicts that people will provide more CHRs for immoral characters than moral characters. It is found that character morality did not make a significant difference on the number of CHRs people generated for character's behaviors, F (1,40) = 0.92, p> .10, η^2_p = .02. Therefore, H6 was rejected. But we should keep in mind this non-significant result may also be a consequence of under-powered analysis.

Post-hoc Analysis

Following the same procedure in Study 1, a 2 (Morality: moral vs. immoral) ×2 (Story: Alice vs. Steve) ANOVA was performed to test whether the findings are generalizable to different story contexts. The two stories did not moderate the effects of character morality on the

tendency of making cause explanations, F (1,100) = 1.68, $p > .10$, $\eta^2_p = .02$, or subjective reason explanations for character's behaviors, F (1,40) = 1.48, $p > .10$, $\eta^2_p = .04$.

However, there was a significant interaction between morality and story context on the number of causal history of reasons (CHRs) people generated, F (1,40) = 6.13, $p = .02$, $\eta^2_p = .13$. When processing Steve's story, portraying him as an immoral person made people generate more CHRs ($M = .37$, $SE = .12$) compared to portraying him as moral ($M = .14$, $SE = .15$), consistent with hypothesis 6. However, the reverse happened to Alice's story. Moral Alice made people generate more CHRs ($M = .50$, $SE = .20$) than immoral Alice ($M = .01$, $SE = .09$). This result contradicts hypothesis 6. Story contexts did make a difference in how people attribute casual history of reasons for moral or immoral characters. One explanation for the contradictory findings is that the event in Alice's story: helping her professor fix his bicycle chain is overall a positive event whereas the event in Steve's story: reporting the team's progress to his boss is a neutral event. People may be likely to attribute a moral character's benign action to the person's moral characteristic and past helping behaviors but unlikely to relate this benign action to an immoral character's personality or past behaviors. The nature of this event eliminates the possibility of using CHRs to explain immoral character's positive behaviors because their personalities or past behaviors are not consistent with the current behavior. Further studies should use neutral events rather than positive- or negative-valenced behavioral events to test the effects of character morality on attribution to causal history of reasons to avoid this confounding effect.

Discussion

In study 2, I find character morality also predicted how people attend to and interpret a character's behavioral events. For moral characters, people focus more on unintentional events

and subsequently explain them by providing more impersonal causes. For immoral characters, people focus more on their intentionally conducted events and explain these behaviors by analyzing their subjective reasons.

These results are consistent with folk-conceptual theory in that actors (/observers) attend more to unintentional (/intentional) behaviors, and mechanical causes are used to explain unintentional behaviors. However, the results are inconsistent with the hypotheses for explaining intentional behaviors. A paired-samples t-test shows, regardless of the morality of the character, people used more reason explanations ($M = 0.47$) than causal history of reasons ($M = 0.21$) to explain intentional behaviors, $t(103) = 2.93$, $p = .004$. In the current study, actor and observer's perspective is linked to the morality of the character. So I can only compare how actors explain character's moral behaviors and how observers explain character's immoral behaviors. In this case, the results make sense because actors want to emphasize their rationale and deliberation for a moral behavior and observers want to emphasize the agent's responsibility for an immoral behavior. So both actors and observers would provide more subjective reason explanations than causal history of reason explanations.

One limitation of this study is there is an alternative explanation for the findings that people attend more to intentional events and offer more reason explanation for immoral characters. Since morality is manipulated by depicting the character as conducting morally undesirable behaviors, an immoral character is inherently linked with a negative event. Negativity bias could be the alternative explanation for the attention and explanation asymmetries. Negativity bias refers to the phenomenon that negative events have a greater impact on people's perception and psychological states compared to neutral and positive events (Rozin & Royzman, 2001). As people tend to pay closer attention to negative events for

diagnostic purposes (Carretié, Mercado, Tapia, & Hinojosa, 2001) and spend extra effort to analyze their reasons and intentions behind these negative behaviors to avoid self being harmed, audience members may attend more to immoral characters' intentional behaviors. Further studies are needed to rule out this confounding factor and better explicate the main drive for the different attention and explanation patterns for moral and immoral characters.

In summary, Study 1 and Study 2 show that morality of a story character influences how people understand the character's mental states and behaviors. People tend to take an actor's perspective when interpreting moral characters compared to immoral characters, showing higher levels of egocentric projection and identification, closer attention to unintentional behaviors, and providing more mechanical causes to explain these behaviors.

Chapter 4: Operationalization of Actor-Observer Perspective in Narrative Processing and the Role of Actor-Observer Perspective in Health-Related Narrative Persuasion

A common method to distinguish the actor's and the observer's views in social psychology is to code participants' thoughts, which is cumbersome and highly dependent on the specific context of the behavioral event. To better operationalize elements of actor-observer perspective in processing media stories, I propose and test the reliability and validity of the multi-dimensional measurements of actor-observer perspective (AOP). In Study 3, an exploratory factor analysis (EFA) was conducted using the same stories as in Study 1 and Study 2 to explore the different dimensions of actor-observer perspective. In Study 4, a confirmatory factor analysis (CFA) was conducted with stories in a health persuasion context about food safety to validate the multi-dimensional measurements of AOP. Construct validity was examined by confirming that these measures replicate earlier results in Study 1 and Study 2 showing the influence of character morality on actor-observer perspective. To establish discriminant validity, I compared AOP with transportation, a measure of the audience member's overall engagement with the story. I posit AOP is a set of measures capturing audience's mental inferences about characters and not a measure of narrative engagement. AOP provides us a new way of looking at narrative processing. Effects of the actor's and the observer's perspective on persuasion, specifically behavioral intentions to perform safe food handling practices, are also tested in Study 4. Understanding and being able to measure the consequences of actor/observer perspective can provide important insights into understanding how audiences process narrative characters.

Study 3

Based on the conceptualization of actor-observer perspective and findings in Study 1 and Study 2, I aim to develop a set of scales measuring actor-observer perspective in processing story characters using three major dimensions: audience's levels of egocentric projection, identification/understanding from the character's perspective, and the type of explanations for character behaviors (including five sub-dimensions).

Measurement of the first dimension regarding egocentric projection is guided by an existing measure of egocentric projection developed by Ames (2004a), which correlates audience members' interpretation of the character's mental states and their own mental states if they were in the same situation as the character. For example, in Study 1, participants rated whether they agree or disagree with eight statements about the character's mental states and about their own mental states in the. Egocentric projection is calculated by the correlation coefficient between judgments about the character and about the self. However, this way of measuring projection is highly dependent on the specific context of the stimulus material. In addition, this measurement reflects the correlation between two sets of mental inferences which may have different psychometric properties than Likert-scales typically used in narrative processing studies. To develop a measure that can more easily be adapted to a variety of situations and stories, I used seven close-ended questions to capture the extent to which audience members use their own mental states to interpret the character's mental states.

The seven questions measure the similarity between one's own and the characters' thoughts, feelings, goals or intentions, behaviors, personality, and skills, including: (1) The character's intentions are the same as mine would be in that situation; (2) The character is the same kind of person I would be in that situation; (3) The character is thinking what I would think

in that situation; (4) The character is feeling what I would feel in that situation; (5) The character has the same skills I would have in that situation; (6) The character acted the same way I would act in that situation; (7) The character has the same goals I would have in that situation.

The dimension of identification is based on the short version of the identification scale developed by Tal-Or and Cohen (2010). It measures how audience members would put themselves in the shoes of the character, who is the actor of the story event, and understand the character's mind from the actor's point of view. Similar to egocentric projection, identification is an outcome of taking an actor's perspective when processing narratives. Identification differs from egocentric projection in that when an audience identifies with a character, they take the character's role, lose awareness of their own identity, and are less accessible to their own thoughts and feelings. The identification dimension includes questions of (1) I could really "get inside" the character's head; (2) I think I understand the character well; (3) I understood the events in the story the way the character understood them; (4) I tend to understand why the character did what he/she did; (5) I felt like the character felt.

The behavioral explanation dimension is based on Malle's (2014) coding scheme that categorizes people's explanations into four different types: reason explanations, causal history of reason (CHR) explanations, capability explanations and mechanical cause explanations. Because judging a behavior as intentional or unintentional is the basis for behavioral explanation, I also included questions about intention judgment for this dimension. The traditional thought-listing method may work better in capturing the nuances of audience's thoughts. However, complex coding instructions are time-consuming and difficult to code reliably as well as troublesome to apply to a variety of contexts. Close-ended Likert-scale questions may be conceptually clearer and more directly reflect the different types of explanations, as well as convenient in a variety of

contexts. Based on folk-conceptual theory of behavioral explanation, I developed 23 close-ended questions asking participants to rate to what extent they believe the character's behavior was (1) intentional (e.g., The character was aware his/her actions would lead to his/her desired outcome; The character didn't have any particular goal in mind, reverse coded), and caused by (2) subjective reasons (e.g., The character's actions were driven by his/her desires), (3) causal history of reasons (e.g., The character's actions were because he/she is that kind of person), (4) the character's abilities (e.g., The character acted that way because he/she was capable of acting that way), and (5) mechanical causes (e.g., The character acted that way because he/she was confronted with this situation).

Testing Construct Validity: Character Morality on Audience Perspective

If the AOP scales are valid they should replicate the impacts of character morality on perspective taking found in previous studies. As I found in Study 1 and Study 2, taking an actor or observer's perspective is influenced by characteristics of the narrative character. For example, in order to distance themselves from immoral characters, audience members are less likely to egocentrically project their own thoughts and feelings when understanding immoral characters or identify with the immoral characters. To establish construct validity of the AOP measures, I examine whether they are influenced by the morality of story characters. I propose

H1: Using the new measurements, participants will report a higher level of egocentric projection when processing moral characters than immoral characters.

H2: Using the new measurements, participants will report a higher level of identification with moral character than immoral characters.

H3: Using the new measurements, participants reading about immoral characters will rate their actions as more intentional than participants reading about moral characters.

H4: Using the new measurements, participants will use more subjective reasons to explain moral character's behaviors than immoral character's behaviors.

H5: Using the new measurements, participants will use more causal history of reasons (CHR) to explain immoral character's behaviors than moral character's behaviors.

Testing Discriminant Validity: Relationship with Transportation

Transportation is a process in which an audience member, like a traveler, transports him/herself to the narrative world, rendering the real world less accessible (Gerrig, 1993). When transported, the entire story (including its characters, setting, and plot) absorbs readers' attention and emotions. Transportation is considered an important mechanism of narrative persuasion. Research has demonstrated that transportation enhances persuasion by reducing counterargument to the persuasive message (Green & Brock, 2000; Moyer-Gusé & Nabi, 2010). Thus it is easier for the transported audiences to adopt story-consistent attitudes (Busselle & Bilandzic, 2009; Slater, Rouner, & Long, 2006), promote behavioral intentions (Kim, Bigman, Leader, Lerman, & Cappella, 2012) and actual behaviors (Hinyard & Kreuter, 2007; Morgan, Movius, & Cody, 2009; Schank & Berman, 2002).

Which perspective people take in processing narratives is conceptually and empirically different from transportation. Actor-observer perspective focuses on audience member's understanding of specific characters rather than the overall narrative experience. In fact, transported audience members could enter into the narrative world either as an actor or an observer, perceiving and interpreting the character from different perspectives. Thus, transportation may not be a good predictor for AOP, and these two constructs should not be strongly related to each other.

Identification, one dimension of actor-observer perspective, has been empirically distinguished from transportation. Tal-Or and Cohen (2010) found that the valence of information about a story character influenced the level of identification but not the level of transportation, whereas the time of deeds influenced the level of transportation but not the level of identification. However, no studies have examined the relationship between transportation and egocentric projection, or between transportation and actor-observer behavioral explanations. In this study, I would like to check the discriminant validity of the AOP scales by examining their relationship with the transportation scale. So I raise the following research question:

R1: What are the relationships between different dimensions of AOP and transportation?

Method

Development of the AOP scales started from an exploratory factor analysis (EFA) with 204 participants exposed to two different story contexts. Construct validity was examined by confirming that these measures replicate earlier results showing the influence of the moral status of a media character on perspective taking. I also compared this scale to Green & Brock's (2000) transportation scale to establish discriminant validity.

Participants

Two hundred and four adult American participants were recruited through Amazon's Mechanical Turk (MTurk) and directed to our experiment conducted on Qualtrics.com. The participants were required to be located in the USA, have a high MTurk approval rate (>95%) and have already participated in at least 100 studies to ensure the quality of their responses. Participants who completed the study had fifty cents deposited to their Amazon accounts through MTurk. The sample contained 49.50% male participants, and the majority of participants were non-Hispanic White (80.39%). The average age of participants was 39.19.

Procedure and Manipulations

A randomized experiment was conducted to examine the influences of a character's morality on actor-observer perspective, using a 2×2 (Story Contexts [Steve/Alice] × Character Morality [moral/immoral]) between-subject factorial design. Each participant was randomly assigned to listen to and later answer questions about one of the four stories (Steve moral: 1min32s; Steve immoral: 1min 33s; Alice moral: 1 min 05s; Alice immoral: 1 min 09s). The story stimuli, manipulations, and procedures were the same as in Study 1.

Measures

A total of 35 items regarding actor-observer perspective were measured. The AOP scales initially include three major dimensions: egocentric projection, identification, and behavioral explanation. Behavioral explanation is further composed of five sub-dimensions: judgment of intentions, subjective reason explanations, causal history of reason explanations, capability explanations, and mechanical causes. Audience' level of transportation into the narrative was also measured.

Egocentric projection. I used seven close-ended questions to capture the extent to which audience members use their own mental states to interpret the character's mental states. Participants rated their agreement with each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Sample questions include, "Steve has the same goals I would have in that situation"; "Steve is feeling what I would feel in that situation"; "Alice acted the same way I would act in that situation". The presentation order of the questions was randomized.

Identification. Identification was measured with a 5-item identification scale (Tal-Or & Cohen, 2010). Items include statements about understanding the character, understanding the events in a way similar to the character, having similar feelings to the character, being able to get

"inside the character's head", and understanding why the character did what he did. For example, "I could really 'get inside' Alice's head", "I felt like Alice felt" and "I tend to understand why Steve did what he did". Participants rated to what extent they agreed or disagreed with each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

Behavioral explanation. In the existing literature, behavioral explanations are usually measured by thought-listing tasks, in which participants write down their explanations for the character's behaviors. Malle (2014) developed a coding scheme that categorizes participants' explanations into four types: reason explanations, causal history of reason explanations, capability explanations and mechanical cause explanations. I added one more dimension to capture how audience members judge the intention of a character's behavior. Based on folk-conceptual theory of behavioral explanation, I developed a behavioral explanation scale, which consists of 23 close-ended questions asking participants to rate to what extent they believe (1) whether the character's behavior was intentional, whether the character's behavior was driven by (2) subjective reasons, (3) causal history of reasons, (4) the character's capabilities, and (5) mechanical causes. Sample questions for each type of explanations include: "Steve did not intend what happened"; "Alice's actions were driven by her desires"; "Alice's actions were because she is that kind of person"; "Steve acted that way because she was capable of acting that way". Participants rated to what extent they agreed or disagreed with each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

Transportation. Transportation was measured with a 5-item short form of transportation scale (Appel, Gnambs, Richter, & Green, 2015). Sample items include "I was mentally involved in the story while listening to it"; "The story affected me emotionally"; "While listening to the

story I had a vivid image of Alice". Participants rated to what extent they agreed or disagreed with each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree).

Results

The goal of an exploratory factor analysis is to discover the underlying structure of the AOP scale and identify items that clearly define each dimension. Principle components analysis with a varimax rotation of the 35 initial questions produced seven components meeting Kaiser's criterion of eigenvalues greater than 1.0, explaining 66.23% of the variance. The seventh factor contained only one item loading higher than .50 and added little to the variance explained. One factor scale is usually not reliable. Also, the measurement model requires at least two indicators per latent variable to be identified, which means it is theoretically possible for the computer to derive a unique set of model parameter estimates. The seventh factor with a single item did not meet this criterion. Therefore, in the revised EFA, I removed the seventh factor and requested six factors. The selection criterion was to retain items with primary loadings greater than .50. Among the 35 items, two items (i.e., Alice/Steve has DIFFERENT skills than I would have in that situation; Alice's actions depended more on the situation than on personality) were removed from the final analysis because they had factor loadings lower than .50 on all of the six factors. Because large secondary loadings may indicate problematic items (Viswanathan, 2005, p. 185), I also eliminated items with a secondary loading greater than half its primary loading (nine more items were removed for this reason).

The revised scale includes the remaining 24 items. The six factors explained 68.44% of the total variance. All items had primary loadings over .50. The final factor loading matrix is shown in Table 1. The six factors were easily interpreted: the first factor labeled "egocentric projection" contained six items measuring to what extent people used their own mental states to

interpret the character's mind. Egocentric projection had an eigenvalue of 5.27, explaining 21.97% of the variance (Cronbach's alpha =.96). The second factor labeled "internal attribution" contained both causal history of reasons and subjective reasons items (7 items). It had an eigenvalue of 3.80, explaining 15.85% of the variance (Cronbach's alpha = .84). The third factor labeled "intention judgment" contained three items measuring to what extent people perceive the character's actions intentional. It had an eigenvalue of 2.03, explaining 8.46% of the variance (Cronbach's alpha = .72). The fourth factor labeled "understanding from the character's perspective" (or "understanding" for short) contained three identification items, measuring to what extent people could understand the character from the actor's own perspective. It had an eigenvalue of 1.94, explaining 8.08% of the variance (Cronbach's alpha = .72). I did not use "identification" to label this dimension to avoid confusions, as the original identification scale contains items indicating both actor's and observer's perspective taking. The fifth factor labeled "capability explanations" contained three items measuring to what extent people explain the character's behavior by the character's ability. It had an eigenvalue of 1.83, explaining 7.64% of the variance (Cronbach's alpha = .70). The sixth factor labeled "external attribution" contained two items measuring to what extent people explain the character's behavior by attributing to situational factors, corresponding to the mechanical cause type of behavioral explanations. It had an eigenvalue of 1.55, explaining 6.45% of the variance (two items; Cronbach's alpha = .60[1]).

[1] It is always encouraged to use multiple, heterogeneous indicators to enhance construct validity in the sense that it increases the likelihood of adequately identifying the construct of interest. In fact, I started with four items to measure the dimension of external attribution (or mechanical causes in Malle's term). However, poor quality items were removed from the scale, leaving only two indicators for this dimension. Reliability of this two-item scale is calculated based on Cronbach's alpha, which has restrictive assumptions and may underestimate the true reliability. The Spearman-Brown coefficient is equal or higher than the Cronbach's alpha and is less biased, especially when the two items have a strong correlation. In the current analysis, I calculated both scores and they are almost the same: Cronbach's alpha=.596, Spearman-Brown coefficient=.597. Therefore, I kept using Cronbach's alpha to report reliability.

Table 1. Factor Loadings Based on a Principle Components Analysis with Varimax Rotation of the 24-item Actor-observer Perspective Scale (Study 3)

	1_Projection	2_Internal	3_Intention	4_Understanding	5_Capability	6_External
The character's intentions are the same as mine would be in that situation. (Proj_3)	**0.921**	0.018	-0.108	0.089	0.096	0.089
The character is the same kind of person I would be in that situation. (Proj_5)	**0.898**	0.074	-0.182	0.095	0.066	0.087
The character is feeling what I would feel in that situation. (Proj_4)	**0.891**	0.006	-0.152	0.152	0.041	0.089
The character acted the same way I would act in that situation. (Proj_6)	**0.88**	-0.02	-0.146	0.08	-0.018	0.145
The character is thinking what I would think in that situation. (Proj_2)	**0.88**	0.008	-0.062	0.14	0.074	0.067
The character has the same goals I would have in that situation. (Proj_1)	**0.83**	0.028	-0.02	0.217	0.091	-0.007
The way the character acted is probably much like the way he/she acted in the past. (CHR_3)	-0.088	**0.781**	0.07	0.148	0.124	0.009
The character's actions were because he/she is that kind of person. (CHR_4)	0.027	**0.77**	0.195	0.074	0.264	-0.061
The character's actions were driven by his/her beliefs. (SubReason_3)	0.074	**0.736**	0.077	0.062	0.045	0.036
The character's actions were driven by his/her values. (SubReason_2)	0.263	**0.696**	0.059	0.092	0.08	-0.243
The character's actions were because of his/her personality. (CHR_1)	0.003	**0.675**	0.223	0.151	0.272	-0.028
The character would have acted that way even if the situation were somewhat different. (CHR_2)	-0.084	**0.648**	-0.145	-0.013	0.096	-0.083
The character acted that way because that's how people like him/her act. (CHR_5)	-0.011	**0.638**	0.153	-0.11	-0.068	0.425
The character was aware his/her actions would lead to his/her desired outcome. (Intent_1)	-0.117	0.068	**0.788**	-0.077	0.203	0.07
The character's actions were driven by his/her desires. (Intent_2)	-0.29	0.08	**0.754**	-0.005	0.014	0.004
The character believed his/her actions would lead to his/her desired outcome. (Intent_3)	-0.128	0.22	**0.709**	-0.017	0.199	-0.169
While listening to the story, I could really "get inside" Steve's head. (Iden_1)	0.096	0.134	-0.022	**0.827**	0.054	-0.033
I think I understand Steve well. (Iden_2)	0.267	0.127	-0.004	**0.793**	0.044	-0.035
I understood the events in the story the way Steve understood them. (Iden_3)	0.364	0.039	-0.099	**0.632**	0.004	0.253
The character did what he/she did because he/she had the ability to do what he/she did in that situation. (Ability_1)	-0.057	0.277	0.194	0.166	**0.736**	0.09
The character acted that way because he/she had the tools to act that way. (Ability_2)	0.118	0.098	0.207	-0.019	**0.693**	0.207
The character had the skill to get the outcome he/she wanted. (Ability_3)	0.215	0.265	0.029	-0.011	**0.675**	-0.035
The character acted that way because he/she was confronted with this situation. (MechCause_2)	0.098	-0.003	-0.029	0.054	0.057	**0.794**
The character's actions were because he/she was in that kind of situation. (MechCause_1)	0.309	-0.18	-0.066	0.041	0.237	**0.682**

Note: Factor loadings < .2 are suppressed;
Extraction Method: Principal Component Analysis;
Rotation Method: Varimax with Kaiser Normalization;
Factor 1: Egocentric projection; Factor 2: Internal attribution; Factor 3: Intention judgment; Factor 4: Understanding from character's perspective; Factor 5: Capability explanations; Factor 6: External attribution

A series of ANOVAs were performed to test hypotheses 1-5 about the impacts of character morality on the different dimensions of actor-observer perspective (Figure 2). Supporting H1, participants reported a higher level of egocentric projection onto moral characters (M=5.09, SE=0.13) than immoral characters (M=3.60, SE=0.12), F (1, 201) = 72.61, $p < .001$, $\eta^2_p = .27$. Character morality also had a significant impact on the level of understanding from the character's perspective, F (1, 200) = 33.99, $p < .001$, $\eta^2_p = .15$. Participants reported greater understanding from the moral character's standpoint (M=5.28, SE=0.10) than immoral character's standpoint (M=4.46, SE=0.10), supporting H2.

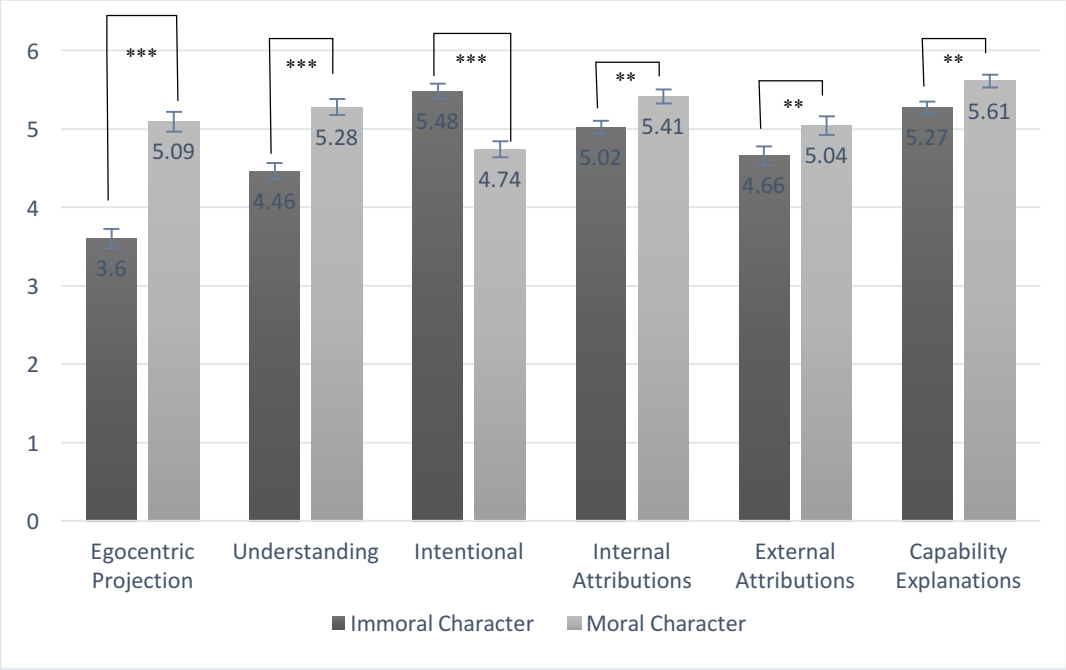

Figure 2. Effect of Character Morality on AOP Scales (Study 3)

The third hypothesis predicts that people judge immoral character's behaviors as more intentional compared to moral character's behaviors. Results showed a significant main effect of morality on judgment of character's intention, F (1, 200) = 28.42, $p < .001$, $\eta^2_p = .12$. People were more likely to interpret behaviors as intentional for immoral characters (M=5.48, SE=0.10) than for moral characters (M=4.74, SE=0.10). Therefore, H3 is supported.

H4 and H5 predict that people will provide more subjective reasons and less causal history of reasons (CHRs) for moral characters compared to immoral characters. However, since the items of subjective reasons and CHRs were loaded under one factor in the EFA, I was not able to examine these two hypotheses separately. One possibility is that both subjective reasons and CHRs attribute the character's behavior to internal and personal factors, so they are empirically similar in explaining people's behaviors. Subjective reasons and CHRs formed a new dimension of AOP, in which people attribute the character's behaviors to internal factors. Character morality had a significant influence on the level of internal attributions, F (1, 199) = 10.82, p = .01, η^2_p = .05. People were more likely to attribute moral character's behavior to internal factors, providing more subjective reasons and causal history of reasons for moral characters (M=5.41, SE=0.09) than for immoral characters (M=5.02, SE=0.08).

Although not hypothesized, external attributions and capability explanations emerged as two important dimensions of AOP and were influenced by character morality. There was a significant main effect of morality on external attributions, explaining character's behaviors by situational factors, F (1, 199) = 5.01, p = .03, η^2_p = .03. People were more likely to provide situational factors to explain moral characters' behaviors (M=5.04, SE=0.12) than to explain immoral characters' behaviors (M=4.66, SE=0.12). Capability explanations were also influenced by character morality, F (1, 200) = 8.00, p = .005, η^2_p = .04. People are more likely to provide capability explanations for behaviors of moral characters (M=5.61, SE=0.08) than immoral characters (M=5.27, SE=0.08). The story context (whether it was Steve or Alice) did not significantly influence how participants explain the character's behavior, nor did it interact with character morality on different types of behavioral explanations, ps>.05.

To investigate the research question (RQ1) about the relationship between transportation and the elements of the AOP, first, transportation was used as the dependent variable in the ANOVA model outlined above. As expected, character morality did not influence audiences' level of transportation. Second, correlation coefficients were computed between transportation and the dimensions of the AOP. Transportation only had a significant relationship with the dimension of "understanding from the character's perspective" (the three items from Cohen's identification scale) ($r=.34$, $p<.001$). There was also a significant correlation between egocentric projection and the five-item Cohen's identification scale ($r=.52$, $p<.001$). There was no other significant relationship of transportation to any of the other dimensions—egocentric projection, intention judgment, internal attribution, external attribution, or capability explanations.

Discussion

Using multi-dimensional measures of actor-observer perspective, Study 3 largely replicated findings in Study 1 and Study 2, providing strong evidence for the construct validity of the AOP scales. People were more likely to interpret immoral character's behavior as intentional and moral character's behavior as unintentional. This is also consistent with Malle's folk-conceptual theory of behavioral explanations. People were more likely to egocentrically project onto and better understood moral characters than immoral characters. Overall, these results indicate that audience members are more likely to take an actor perspective for moral characters and an observer perspective for immoral characters, supporting the notion that different ways of presenting a story character can influence audience perspective taking.

The results also confirm that these measures are distinct from at least one measure of engagement with a story—transportation. The only significant overlap between transportation and the dimensions of the AOP were with the items from Cohen's identification scale. Previous

studies have found that manipulations of the valence of information about a story hero influenced identification (similar to the results here) but not transportation indicating that identification and transportation are distinct, although Tal-Or and Cohen do report a "marginally significant" ($r = .22$, $p < .10$) relationship (Tal-Or & Cohen, 2010, p. 411).

The effect of morality on the internal and external attribution dimensions of AOP is not completely consistent with the traditional attribution theory or Malle's (2005) folk conceptual theory of behavioral explanations. The differences appear to be at two levels. First, regarding the conceptual categorizations of behavioral explanations, results of our EFA was consistent with the classic attribution theory which identifies internal (dispositional factors) and external (situational factors) attributions as two different dimensions of explaining behaviors from actor or observer's perspective. This result is not consistent with Malle's conceptualization of folk behavioral explanation, which posits that both dispositional and situational factors belong to the type of causal history of reasons. In addition, Malle suggests subjective reasons is a different type of explanation from dispositional reasons, whereas in our study they were loaded under one "internal attribution" factor.

Second, regarding the effects of character morality on behavioral explanations, our results differ from both the traditional attribution theory and part of Malle's folk-conceptual theory. Traditional attribution theory suggests actors tend to attribute their own behaviors to situational factors whereas observers tend to attribute others' behaviors to dispositional factors (Jones & Nisbett, 1971). Malle and his coauthors (2007) predicts that actors are more likely to use subjective reasons to explain their behaviors, whereas observers are more likely to use dispositional and situational factors to explain others' behaviors. This study suggests that people tend to take an actor's perspective when processing moral characters, as a result, they use more

personal (including both dispositional and subjective reasons) as well as situational factors to explain a moral character's behaviors, compared to an immoral character's behavior. These differences may point to a possibility that although the mental strategies we use to process narrative characters largely parallel how we process social others in real interactions, there may still be some differences in the way social others and narrative characters are processed and understood. In Malle's study, actor-observer position is manipulated by letting pairs of participants have interpersonal conversations then write done everything that was going on with their partner and with themselves. The events mentioned in the conversation (e.g., Why didn't she speak to him? Why are you rushing?) were coded and used for measuring behavioral explanations. These events differ in nature from the events in my stimuli. First, in my study, the events were embedded in a narrative context. Second, taking an actor's perspective in narrative processing does not require readers to have the same experience before, but an actor's position in real life must be doing the behavior and have the experience of participating in the action. Third, vicarious participation in narrative events may require less cognitive effort compared to actual participation, so the differences between taking an actor's perspective and an observer's perspective in narrative processing may not be large enough compared to real social interactions. Also, the dimension of internal attribution includes both causal history of reasons and subjective reasons, complicating the meaning of this dimension and making it less efficient in indicating the actor-observer perspective.

Nevertheless, the relative success of the measures developed in Study 3 indicates that further development of actor-observer perspective scales is merited. Therefore, Study 4 was conducted to further validate the scales.

Study 4

Based on the results of the Exploratory Factor Analysis in Study 3, I conducted a Confirmatory Factor Analysis (CFA) of the AOP scale using a separate sample in a different story context. Study 4 has three purposes: 1. to test the measurement model proposed in the Study 3; 2. to further explore the impacts of narrative features (i.e., first-person narratives, character vulnerability) on perspective taking; 3. to test the consequences of taking actor's or observer's perspective in the context of health-related narrative persuasion about food safety. Specifically, I will use the AOP scales to measure audience members' perspective taking experience and examine how taking an actor's or observer's perspective influences people's intention to do safe food handling practices.

Context of the Study

Study 4 is part of a larger research project examining the effects of personal narratives of foodborne illness on increasing people's compliance with safe home food preparation practices. Foodborne diseases interfere with people's normal living, working, or schooling and can even be life threatening. Each year 48 million Americans (approximately 17% of people in the United States) get sick because of foodborne illnesses, with 128,000 hospitalizations and 3,000 deaths (Scallan, et al., 2011). Home contamination is estimated to be responsible for about 20% of foodborne illnesses. These infections are preventable if people recognized the importance of food safety issues and followed proper steps to prepare and store food.

One strategy that has been found effective in increasing people's risk perception and behavioral intention in other domains but not tested for food safety is to use first-person narrative messages from victims of food-borne illness or affected family members (De Wit, Das, & Vet, 2008; Kim & Shapiro, 2016). The goal of this project is to examine the effectiveness of first-

person narratives and explore message features that help enhance the narrative persuasion in food safety and other health contexts. In this study, the main story characters are the victims of food-borne illness who share their experience of suffering from food-related diseases. Therefore, how audience members react to the character largely depends on characteristics of the victim. Whether the character is vulnerable to the risk or not may play an important role in influencing whether the audience member takes an actor's or observer's perspective in processing the narrative, which may further impact the persuasive outcomes. In this specific context, children under five and people older than 50 are particularly vulnerable to foodborne illnesses because of their weak immune system. On the one hand, people tend to generate more intense emotional responses (e.g., sympathy) toward vulnerable characters than non-vulnerable characters. On the other hand, most people will not identify themselves with vulnerable characters. Limited research attention has been paid to what types of victims should be featured in a narrative to enhance the persuasive impacts on audience members. Therefore, besides testing the validity of AOP scales, this study also attempts to contribute to the current literature of narrative persuasion by examining the effects of character vulnerability and first-person accounts on increasing people's intention to prepare food safely through the mechanism of taking an actor's and observer's perspective.

Testing the AOP Scales

Study 3 indicates that the actor-observer perspective scales are composed of six dimensions: egocentric projection, understanding from the character's perspective, external attribution, intention judgment, internal attribution, and capability explanations. To replicate the previous results for internal consistency and to extend the validity tests, Study 4 uses a

persuasive narrative promoting safe food handling practices to test the fitness of the measurement model and predicts:

H1: People's responses to the actor-observer perspective scales will fit the measurement model and will be loaded under six factors: egocentric projection, understanding from the character's perspective, external attribution, intention judgment, internal attribution, and capability explanations.

Impacts of First-person Narratives and Character Vulnerability on Actor-Observer Perspective

One form of a health narrative tested in a few contexts is a first-person or autobiographical account of illness. In first-person narratives, the narrator is the main character and tells the story from her/his own perspective. First-person accounts of illness have been used by investigators in two ways. First, they have been used to understand the person's experience as reflected in the story they tell about their health issue (Gray, 2009). Secondly, first-person narratives have been found to be more effective than statistical evidence in changing perceptions of risk and behavioral intentions (De Wit, Das, & Vet, 2008). Such first-person accounts are evaluated more positively, are easier to understand, enhanced recall, reduced counterarguing and negative reactions, strengthened connection with the message source, increased relevant discussions, increased efficacy beliefs and influenced behavior in those generally hardest to reach, and have distinct ability to aid in prevention campaigns (Houston et al., 2011; Kreuter et al., 2010; McQueen & Kreuter, 2010; Miller-Day & Hecht, 2013). Some studies find that first-person accounts appear to promote a sense of personal risk without the defensive processing that accompanies most threatening health messages (De Wit et al., 2008). More importantly, first-person narratives may also activate self-related concepts and strengthen the association between

the self and the story (Zhou & Shapiro, 2017). This mechanism will make the story more engaging and make the audience more likely to take an actor's perspective when processing first-person narratives. Therefore, I hypothesize that

H2: People will be more likely to take an actor's perspective indicated by a) greater egocentric projection, b) greater understanding from the character's perspective, making c) more external attributions and d) capability explanations, e) less internal attributions and f) intention judgments, when processing first-person stories than third-person stories.

Features of the story character also influence how people interpret the character's mental states. Stories of vulnerable populations such as children or elderly people often receive more attention than stories of healthy adults. One reason is that vulnerable people are in higher need for help and the consequence of an event on these people is usually more significant than that on general others. People may be more cognitively and emotionally engaged when processing vulnerable victim's story and willing to interpret the event from the character's perspective (Genevsky, Vastfjall, Slovic, & Knutson, 2013; Kogut, Slovic, & Västfjäll, 2016). However, people are unlikely to perceive themselves similar to the highly vulnerable characters. It is human nature to be egocentrically biased and reluctant to admit that we are vulnerable to health risks (Branstrom & Brandberg, 2010). Therefore, audience members tend to maintain separate identities from vulnerable populations and are likely to take an observer's perspective. Few studies have compared the effects of using high or low vulnerable characters on perspective taking. Given the potentially contradictory predictions and the lack of empirical evidence, I raise the following research question:

RQ1: Will people be more likely to take an actor's perspective when processing story characters who are high in vulnerability than those low in vulnerability?

Effects of Actor-Observer Perspective on Behavioral Intention

When processing narratives, audience members need to understand story characters who have different identities, and are in different temporal and spatial framework from the audience member. Perspective taking is an important mental strategy to read others' thoughts (Epley, Keysar, Van Boven, & Gilovich, 2004; Marvin, Greenberg, & Mossler, 1976), infer other's motives (Ames, 2004b), and feel others' emotions (Brunyé, Ditman, Mahoney, & Taylor, 2011; Coplan, 2004). As explicated in Chapter 2, there are two types of perspective taking depending on whether the audience member imagines the events from the actor's perspective who is actively performing the actions, focusing on the environment and objects that would interact with the actor, or views the event from an outside observer's perspective, focusing on the person who carries out actions.

The perspective through which a narrative is processed has important consequences on a reader's cognitions, emotions, and behaviors. For example, Rall and Harris (2000) found that people have better comprehension and recall of a narrative presented from the perspective of the protagonist (an actor's perspective) than from an observer's perspective. And such enhanced comprehension of the first-person narrative may be a result of taking an actor's perspective in the reader. Taking an observer's perspective also has a function of distancing the reader from the specific event or context and reducing the intensity of story relevant emotions (Berntsen & Rubin, 2006). In contrast, actor's perspective taking usually leads to high degree of emotional reactivity (Brunyé et al., 2011) and self-referencing (de Graaf, 2014), relating the situation closely to oneself. For example, actor's perspective produced more nervousness and emotionality (Terry & Horton, 2007), whereas observer's perspective taking makes retrieving past pain memories less painful (McNamara, Benson, McGeeney, Brown, & Albert, 2005). Although these

findings are based on recalling one's past experiences, it should also apply to processing stories of another person. Additionally, perceiving story characters through different perspectives also influences perspective taker's behaviors. Jackson, Meltzoff, and Decety (2006) found that latency to imitate hand and foot change behavior in a conversation was significantly shorter when the behavior is shown from the actor's perspective than from the observer's perspective. This finding suggests that taking an actor's perspective can activate corresponding sensory-motor responses more easily than taking an observer's perspective.

In sum, actor's perspective tends to facilitate story comprehension, enhance the intensity of emotion reactions, promote behaviors consistent with the character or the story theme, all of which help increase the persuasive effects of narratives. Particularly relevant to this study is the effect of actor-observer perspective on changing audience's intention to prepare food safely. Behavioral intention is an important persuasive outcome that strongly predicts actual behavior (Fishbein & Ajzen, 2010). Based on the narrative persuasion literature, people who are more engaged in the narrative world and more identify with the character hold stronger story-consistent beliefs and intentions (Green & Brock, 2000; Igartua, 2010; Kim et al., 2012). Audience members with an actor's perspective in processing stories have greater engagement with the overall story and identification with the character than audience members with an observer's perspective. In fact, one dimension of the actor's perspective taking: understanding from the character's perspective is derived from the concept of identification. The actor's perspective taking facilitates audience members to keep track of character's goals and intentions, to form stronger bonds with the character, and to relate the behavioral event to themselves (de Graaf, 2014), making people more likely to adopt story-consistent behavioral intentions than the

observer's perspective taking (Nan, Dahlstrom, Richards, & Rangarajan, 2015). Therefore, I hypothesize that

H3: Taking an actor's perspective when processing persuasive narratives increases audience member's behavioral intention to do what is advocated by the story.

Method

Participants and Procedures

To test the measurement model and the consequences of actor's and observer's perspective taking, I recruited a total of 339 U.S. participants on Mturk and directed them to Qualtrics.com to complete a survey. Among them, the majority were White Americans (77.4%), followed by Asians (7.1%), African Americans (6.5%), Latinos or Mexican Americans (5.4%), Native Americans or other ethnic groups (3.6%). There were 45.2% male participants, and the average age was 38.40.

In the study, participants were instructed to read a story about a victim who suffered from foodborne illness. They were randomly assigned to one of the four story conditions (see details below). The story describes a character's experience of having a salmonella infection in a family gathering dinner because of cross contamination while preparing a chicken. The story is based on a true story and adapted from an interview produced by the Food and Drug Administration (FDA). Story stimuli are provided in Appendix B. After reading the story, participants answered a set of questions measuring their reading experience and behavioral intentions to perform food safety practices.

Manipulation

I manipulated the vulnerability of the main story character to foodborne illness and whether the story is told from the first-person or third-person perspective. In the high

vulnerability condition, the main character who suffered from salmonella is the 72-year-old grandma; whereas in the low vulnerability condition, the main character who suffered from salmonella is the 25-year-old granddaughter. In the first-person narrative condition, the narrator tells her own story; whereas in the third-person narrative condition, the narrator tells someone else's story. For example, in the high vulnerability first-person condition, the grandma tells her own experience of suffering from salmonella. In the low vulnerability third-person condition, the grandma tells her granddaughter's suffering of this foodborne illness. The cause, level of seriousness, and the consequences of the infection are the same. The length of these four stories is comparable.

Measures

Actor's and Observer's perspective taking. The six-dimensional measurements generated in Study 3 were used to measure actor-observer perspective. Actor's perspective taking was indicated by four measures: egocentric projection, understanding the story from the character's perspective, explaining the behavior by external factors, and explaining the behavior by the character's abilities. Participants' observer's perspective taking was indicated by two measures: explaining the behavior by internal factors and intention judgment. I used the same items based on EFA in Study 3 to measure each dimension of actor-observer perspective. For example, six items measured to what extent people egocentrically project onto the main story character, including "The character is feeling what I would feel in that situation". Participants rated their level of agreement with each statement ranging from 1= "strongly disagree" to 7 = "strongly agree".

Behavioral intention. I measured behavioral intention through seven items asking how participants would prepare or store food in the future. Sample items include "I will use a food

thermometer the next time I prepare raw meat or chicken to make sure that the food is fully cooked", "The next time when I prepare food, I will use one cutting board for fresh produce and a separate one for raw meat, poultry and seafood," and "I will use or discard refrigerated food on a regular basis". Participants rated their agreement with each statement along a 1-7 Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). I averaged the score of these seven items into a behavioral intention scale (Cronbach's $\alpha = .82$, $M = 5.89$, $SD = .39$).

Results

Data Preparation and Descriptive Statistics

Outlier. Based on the Mahalanobis distance statistic, I identified a case that significantly deviates from the sample (MD=110.106, $p<.05$). This participant only selected 1 or 7 for all the questions. Therefore, I deleted this outlier from the final analysis.

Multivariate normality. Before conducting further statistical analysis, we need to make sure the dataset fulfills certain assumptions such as multivariate normality. Since univariate normality is "a necessary but not sufficient condition for multivariate normality to hold" (Stevens, 1996, p.243), I tested each variable's normality first. Although all of the items have relatively low skewness index (<3.0) and kurtosis index (<8.0), nearly all variables have extremely small p-value in the Shapiro-Wilk's Normality Test (*p*s<.001), suggesting they are significantly different from the normal distribution, violating the univariate and multivariate normality assumptions. Instead of using a normal theory method such as Maximum Likelihood (ML), I used Robust Maximum Likelihood (MLR) to analyze the data.

Table 2. Descriptive Statistics of the Research Variables (Study 4)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. 1stp Story	0.251	0.012	0.056	0.001	-0.006	0.069	0.048	0.1	-.146**	-.138*	-0.103	0.044	0.078	0.016	-0.011	0.019	0.026	0.025	0.065	0.075	.141**	0.046	0.023
2. Vulnerability	0.003	0.251	0.06	.142**	.131*	0.09	.141**	0.089	-0.011	0.043	.138*	-0.086	-0.091	-0.038	-0.008	0.006	-0.026	-0.076	0.039	0.083	0.096	0.101	-0.074
3. Proj_1	0.045	0.049	2.614	.626**	.773**	.612**	.676**	.603**	-0.063	-0.06	-0.05	-0.031	-0.023	-0.027	.173**	0.081	0.107	0.091	.109*	.380**	.426**	.321**	-0.012
4. Proj_2	0.001	0.123	1.75	3.007	.663**	.706**	.722**	.642**	-0.003	0.033	0.061	-0.106	-0.085	0.004	.166**	0.105	0.066	0.015	.113*	.374**	.408**	.340**	-0.098
5. Proj_3	-0.005	0.107	2.042	1.874	2.663	.660**	.733**	.642**	-0.069	-0.021	-0.006	-.117*	-0.074	-0.066	.152**	0.034	0.06	0.009	0.073	.311**	.389**	.278**	-0.073
6. Proj_4	0.052	0.069	1.507	1.865	1.641	2.32	.642**	.564**	-0.05	0.016	0.024	-0.087	0.001	-0.083	.112*	0.042	0.085	-0.016	0.099	.337**	.441**	.328**	-0.026
7. Proj_5	0.043	0.125	1.943	2.217	2.128	1.738	3.145	.782**	0.022	0.036	0.057	-0.067	-0.022	0.05	.190**	.118*	.128*	0.013	0.074	.352**	.405**	.297**	-.149**
8. Proj_6	0.098	0.089	1.932	2.202	2.071	1.698	2.759	3.909	-0.015	0.005	0.06	-0.019	0.057	.131*	.230**	0.103	.146**	0.041	0.039	.284**	.358**	.233**	-.142**
9. Intent_1	-0.136	-0.01	-0.19	-0.01	-0.21	-0.141	0.072	-0.055	3.454	.853**	.723**	.155**	0.088	0.076	-0.021	-0.03	0.083	.147**	.121*	-0.028	-0.049	0.067	-0.054
10. Intent_2	-0.129	0.04	-0.18	0.107	-0.064	0.044	0.117	0.019	2.963	3.486	.783**	.130*	.110*	0.072	0.006	0.019	0.094	.144**	.144**	-0.022	-0.003	0.096	-0.058
11. Intent_3	-0.098	0.132	-0.155	0.203	-0.02	0.069	0.192	0.226	2.554	2.781	3.616	.139*	.114*	0.094	0.009	-0.012	0.062	0.073	0.09	-0.002	-0.056	0.084	-0.057
12. CHR_1	0.033	-0.065	-0.075	-0.277	-0.289	-0.202	-0.181	-0.058	0.436	0.368	0.4	2.295	.637**	.493**	0.096	.119*	.373**	.367**	0.023	-0.059	-0.074	-0.053	0.021
13. CHR_4	0.059	-0.069	-0.057	-0.221	-0.184	0.002	-0.059	0.169	0.247	0.311	0.328	1.461	2.28	.518**	.118*	.151**	.386**	.348**	0.003	-0.064	-0.062	-0.065	0.013
14. CHR_5	0.013	-0.03	-0.069	0.012	-0.173	-0.203	0.142	0.415	0.227	0.216	0.288	1.2	1.256	2.57	.187**	0.105	.344**	.287**	0.098	0.013	0.009	0	0.094
15. MC_1	-0.007	-0.005	0.362	0.371	0.323	0.221	0.436	0.591	-0.052	0.015	0.021	0.189	0.231	0.389	1.667	.463**	.231**	.269**	.177**	.191**	.302**	.139*	0.096
16. MC_2	0.015	0.005	0.204	0.282	0.088	0.1	0.327	0.318	-0.087	0.056	-0.036	0.281	0.355	0.262	0.932	2.422	.223**	.321**	.164**	.148**	.143**	0.087	0.06
17. Ability_1	0.019	-0.019	0.254	0.17	0.144	0.191	0.335	0.429	0.228	0.258	0.173	0.835	0.86	0.815	0.44	0.514	2.173	.612**	.250**	0.024	0.041	-0.007	0.015
18. Ability_2	0.017	-0.053	0.206	0.037	0.021	-0.035	0.032	0.113	0.38	0.376	0.195	0.775	0.731	0.641	0.485	0.694	1.262	1.939	.303**	0.082	0.079	0.04	0.079
19. Ability_3	0.05	0.03	0.274	0.304	0.186	0.234	0.204	0.12	0.351	0.418	0.268	0.054	0.008	0.246	0.352	0.399	0.574	0.658	2.423	.148**	.140*	.189**	0.086
20. Iden_1	0.054	0.059	0.879	0.929	0.731	0.74	0.898	0.81	-0.076	-0.06	-0.005	-0.13	-0.14	0.03	0.357	0.332	0.051	0.164	0.332	2.07	.609**	.492**	.160**
21. Iden_2	0.094	0.063	0.915	0.939	0.844	0.891	0.956	0.939	-0.121	-0.007	-0.142	-0.149	-0.125	0.019	0.518	0.296	0.08	0.146	0.289	1.163	1.757	.561**	.161**
22. Iden_3	0.028	0.061	0.624	0.707	0.546	0.6	0.633	0.554	0.149	0.214	0.191	-0.096	-0.117	-0.001	0.216	0.163	-0.012	0.068	0.354	0.85	0.891	1.435	.123*
23. Beha_Intention	0.011	-0.035	-0.018	-0.162	-0.113	-0.037	-0.251	-0.266	-0.095	-0.102	-0.102	0.031	0.019	0.143	0.118	0.088	0.022	0.105	0.127	0.219	0.203	0.14	0.899

Note: Correlations are provided in the upper triangle of the matrix, variances are located on the diagonal, and covariances are reported in the lower triangle.

Table 2 reports the correlations, variances, and covariances of the research variables. I followed two-step modeling procedure to test the hypothesized model——the first step tests the CFA measurement model (H1); the second step tests the structural regression (SR) model (H2, H3, & RQ1). I report indices of model chi-square (χ^2), RMSEA, CFI, AGFI, and SRMR. Chi-square tests the exact-fit hypothesis, which is goodness-of-fit statistic. Non-significant value (i.e., $p>.05$) indicates a good fit of the model to the data. RMSEA is a badness-of-fit index. Good fit models have RMSEA less than .05, with its lower bound less than .05, upper bound less than .10. CFI and AGFI values larger than .90, SRMR less than .08 indicate good fit.

One-factor Measurement Model

Although I conceptualize actor-observer perspective as composed of multiple dimensions, it should be determined whether the fit of a simpler, one-factor measurement model is comparable (Kline, 2011, p.234). So the very first step is to test this single-factor assumption. The factor loading of "Proj_1" is set to 1 in order to scale the latent variables. The overall fit of this one-factor model was poor (shown in Table 3 and illustrated in Figure 3), because the chi-square (χ^2=2237.68, df=252, p<.001) is significant, the RMSEA (.15) is larger than .05, the lower bound of the 90% confident interval of RMSEA (.15) is larger than .05 and its upper bound (.16) is larger than .10. SRMR (.18) is larger than .08. Although AGFI (.92) is larger than .90, the CFI (.39) is very low and less than .90.

In addition, not every link is significant. And among those significant links, some factor loadings are extremely low (around or below .05) for the indicators that measure understanding and external attribution. These results indicate discriminant validity among observed variables that they measure different factors. Therefore, I should reject this one-factor model and specify

the indicators under six factors——projection, understanding from the character's perspective, external attributions, internal attributions, intention judgment, and capability explanations.

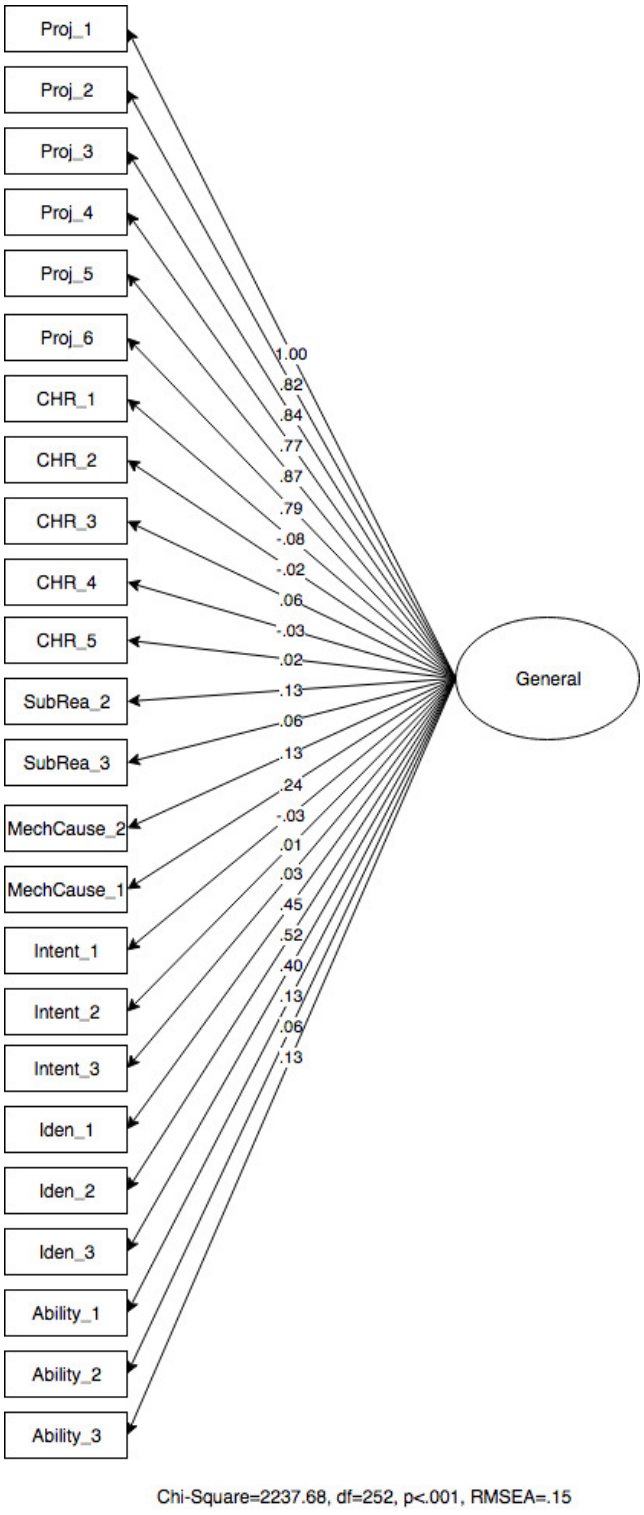

Figure 3. One-factor Measurement Model (Study 4)

Baseline Measurement Model

I set the factor loadings of "Proj_1", "Iden_1", "MechCause_2", "CHR_1", "Intent_1", and "ability_1" to 1 in order to scale the latent variables. Model fit indices are shown in Table 3 and illustrated in Figure 4. The chi-square (χ^2=486.89, df=237, p<.001) is significant, the RMSEA (.06) is larger than .05, which indicate bad model fit.

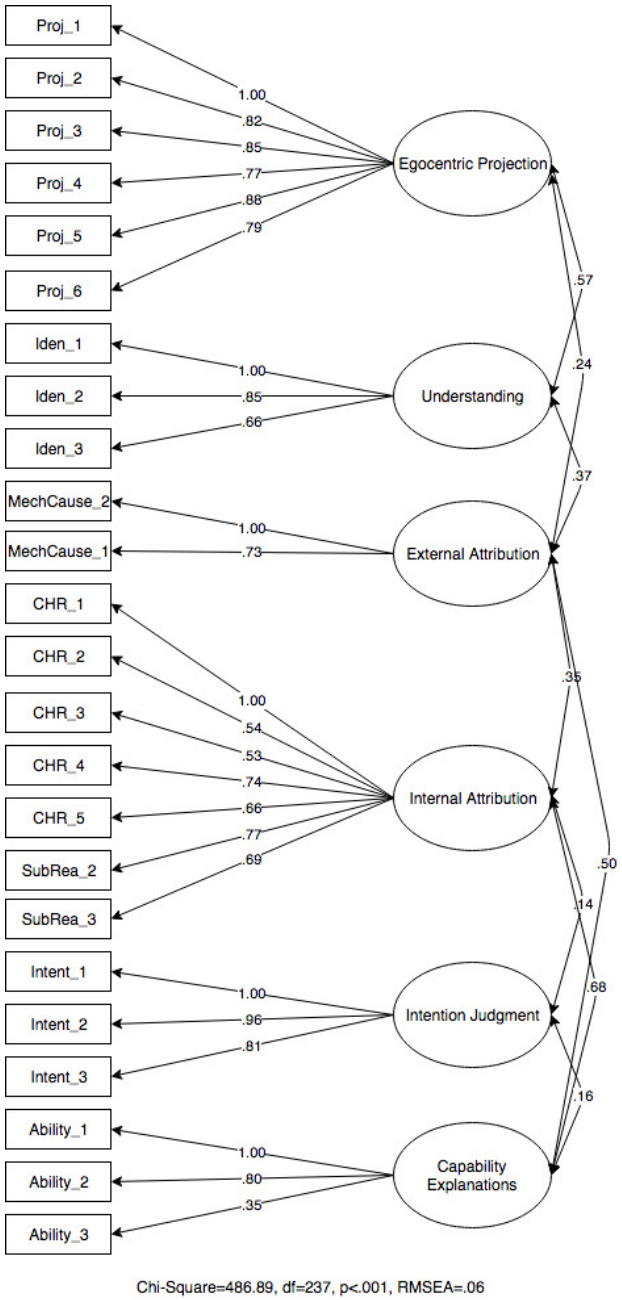

Figure 4. Standardized Coefficients of the Baseline Measurement Model (Study 4)

However, the lower bound of the 90% confident interval of RMSEA (.05) is around .05, and its upper bound (.07) is less than .10, which are in the acceptable range. SRMR (.05) is less than .08 and both the CFI (.92) and AGFI (.97) are above .90. All of these indices indicate good fit. In addition, indicators loaded under the same factor show good convergent validity. All hypothesized paths are significant and positive. Except from three items (i.e., CHR_2, CHR_3, Ability_3), all standardized factor loadings are above or around .70 (Kline, 2011, p.116). The correlations between factors are moderate (the correlation between projection and understanding is .57, which is the highest) or low, which indicates discriminant validity. These mixed results indicate opportunities existed for improving the model.

Revision of the Measurement Model

First, I removed the three low factor loading items under the dimension of "internal attribution" and "capability explanations". Two of the three items, CHR_2 and Ability_3, had consistently low factor loadings in both Study 3 and Study 4, ranking as the lowest or the second lowest item under the corresponding dimension. Although CHR_3 had a relatively high factor loading in Study 3, the result did not replicate in Study 4, suggesting this item may not be a reliable indicator of external attribution for different types of stories. Therefore, it is removed from the scale. Second, based on the size of contribution in decreasing chi-square indicated by modification indices and theoretical reasons, error covariances were added between SubReason_2 and SubReason_3, between Proj_5 and Proj_6, between CHR_1 and CHR_4, and between Proj_1 and Proj_3. The rationale for these modifications is that conceptually SubReason_2 and SubReason_3 capture the same sub-dimension of "subjective reasons" under "internal attribution". Both CHR_1 and CHR_4 focus on the character' personality to explain behaviors. Thus they may be commonly influenced by factors that are not specified by the

model. Proj_1, Proj_3, Proj_5, and Proj_6 are all loaded under the latent factor of "projection". It is reasonable that audiences may be influenced by unspecified factors that affect both projecting one's goals and thoughts onto the characters, and projecting intentions and feelings onto the characters. Third, after adding the above error covariances, I found that SubReason_2 and SubReason_3 are cross-loaded under "external attribution" and "understanding", Proj_6 is cross-loaded under "internal attribution". To improve the discriminant validity and clarify the differences between each conceptual dimension, I removed these items from the scale. Now the dimension of "internal attribution" is completely focused on dispositional factors, which is theoretically clearer and makes this dimension more efficient in indicating observer's perspective taking. The scale ends up with 18 items. Fourth, I further added error covariances between Proj_2 and Proj_4, MechCause_1 and Iden_2, and Proj_4 and Proj_5 based on the size of contribution in decreasing chi-square indicated by modification indices. Although MechCause_1 and Iden_2 are loaded under two different latent factors, both attributing to external factors and understanding the character's perspective indicate the greater extent of taking an actor's perspective when processing stories. Therefore, it is reasonable to add a link between these two items.

After the above modifications, the overall fit of the model improved substantially. As reported in Table 3 and Figure 5, the chi-square (χ^2=130.75, df=115, p=.15) is not significant, the RMSEA (.02) is less than .05, the lower bound of the 90% confident interval of RMSEA (.00) is less than .05 and its upper bound (.03) is less than .10. SRMR (.03) is less than .08 and both the CFI (.99) and AGFI (.99) are above .90. All the indices indicate this model has an overall good fit. Therefore, H1 is supported. Measurements of actor-observer perspective are composed of six factors: egocentric projection, understanding from the character's perspective,

external attribution, internal attribution, intention judgment, and capability explanations. I use this model as the final measurement model of actor-observer perspective and proceed to build the structural regression model.

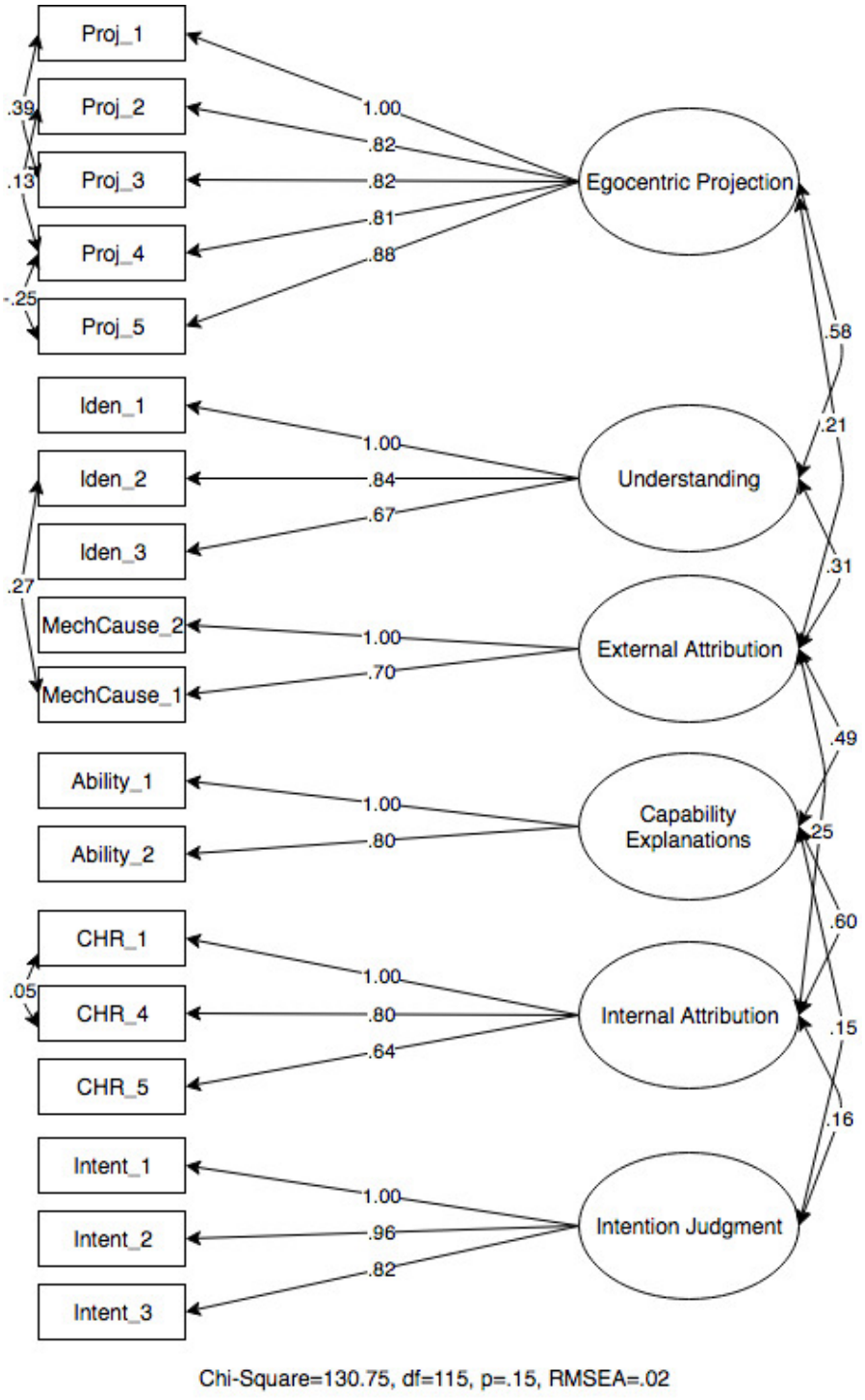

Figure 5. Standardized Coefficients of the Final Measurement Model (Study 4)

Baseline Structural Regression Model

To test H2, H3, and RQ1, I build a path model specifying the links between first-person narrative, character vulnerability, the six-dimensions of actor-observer perspective, and behavioral intention to perform safe food handling practices. The hypothesized model did not fit the data well. Model fit indices are shown in Table 3 and illustrated in Figure 6. The chi-square (χ^2=413.48, df=168, p<.001) is significant, SRMR (.12) is larger than .08, and the RMSEA (.07) is larger than .05. Although the upper bound of the 90% confident interval of RMSEA (.07) is below .10, its lower bound (.06) is larger than .05, which indicates bad model fit. But both CFI (.91) and AGFI (.99) are above .90, which indicates a good model fit.

In addition, not all the hypothesized paths are significant. Processing highly vulnerable story characters only significantly induced egocentric projection (b=.14, *p*=.01) and increased understanding from the character's perspective (b=.12, *p*=.06) at marginally significant level. These two dimensions of actor's perspective taking are also associated with audience member's intention to perform safe home food preparation practices. Egocentric projection decreased people's behavioral intention (b=-.26, *p*=.001), whereas understanding increased people's behavioral intention (b=.30, *p*<.001). First-person narratives made people less likely to judge the character's behavior as intentional (b=-.15, *p*=.01), and more likely to understand the character's perspective (b=.13, *p*=.05) compared third-person narratives. Therefore, H2 and H3 are partially supported. To test whether the proposed theoretical model has the potential to have a better model fit, further revisions are needed.

Figure 6. Standardized Coefficients of the Baseline Structural Regression Model (Study 4)
Note: Dash lines indicate non-significant path coefficients; all other path coefficients are statistically significant at $p<.05$ level.

Revision of the Structural Regression Model

The revised SR model removed all the non-significant paths, and only specify the impacts from character vulnerability to egocentric projection and understanding from character's perspective, from the first-person narrative to understanding and intention judgment, from egocentric projection and understanding to behavioral intention.

After deleting the non-significant paths, the overall fit of the model is significantly improved. As reported in Table 3, the chi-square (χ^2=82.12, df=68, p=.12) is not significant, the RMSEA (.03) is less than .05, the lower bound of the 90% confident interval of RMSEA (.00) is less than .05 and its upper bound (.04) is less than .10. SRMR (.03) is less than .08 and both the CFI (.99) and AGFI (.99) are above .90. All the indices indicate this model has an overall good fit.

Table 3. Summary of Model Fit Indices (Study 4)

MODELS	χ^2(df)	p	RMSEA	90% Confidence Interval of RMSEA	CFI	AGFI	SRMR
One-factor MM	2237.68(252)	<.001	.15	(.15 ; .16)	.39	.92	.18
Baseline MM	486.89(237)	<.001	.06	(.05; .07)	.92	.97	.05
Revised MM[a]	130.75(115)	.15	.02	(.00 ; .03)	.99	.99	.03
Baseline SR	413.48(168)	<.001	.07	(.06; .07)	.91	.99	.12
Revised SR[b]	82.12(68)	.12	.03	(.00 ; .04)	.99	.99	.03

Note:
[a] Removed low factor loading items: CHR_2, CHR_3, Ability_3; Removed cross-loading factors SubReason_2, SubReason_3; Added error covariances between Proj_5 & Proj_6, CHR_1 & CHR_4, Proj_1 & Proj_3, Proj_2 & Proj_4, MechCause_1 & Iden_2, and Proj_4 & Proj_5.
[b] Deleted all non-significant paths.

Results of the statistical tests for individual paths are reported in Figure 7. Hypothesis 2 predicts first person narratives will induce more actor's perspective indicated by greater egocentric projection, understanding, external attribution, and capability explanations, and less intention judgment and internal attribution. Results show a significant effect of first-person narrative on understanding. People reading first-person narratives reported a higher level of understanding from the story character's point of view than third-person narratives (b=.11, t = 2.11, *p*=.04). First-person narratives also made people less likely to judge the character's behaviors as intentional (b=-.15, t = -2.63, *p*=.01), compared to third-person narratives. So H2b and H2e are supported. To answer RQ1, I found significant effects of character vulnerability on egocentric projection and understanding. Stories that feature highly vulnerable characters made people more likely to egocentrically project their own goals, thoughts and feelings onto the character (b=.14, t = 2.56, *p*<.001) and have better understanding of the character from the character's perspective (b=.11, t = 1.86, *p*=.06), compared to stories that feature lower vulnerable characters. In addition, understanding the story from the character's perspective increased people's intention to comply with what is suggested by the story (b=.38, t = 4.04, *p*<.001); whereas egocentrically project one's thoughts and feelings to understand the story character decreased people's behavioral intentions to perform safe food practices (b=-.33, t = -4.12, *p*<.001). H3 is partially supported. This indicates that the effects of first-person narrative and character vulnerability on behavioral intention are mediated by specific dimensions of actor's perspective taking, including egocentric projection and understanding from the character's perspective. More importantly, these dimensions play different roles in influencing health-related persuasive outcomes. The indirect effect of reading highly vulnerable character's story through egocentric projection is detrimental to audience's behavioral intention, b=-0.05, CI [-0.12, -0.01].

In contrast, reading highly vulnerable character's story through understanding character's perspective increased audience's intention to follow safe food handling practices, b=0.04, CI [0.01, 0.10].

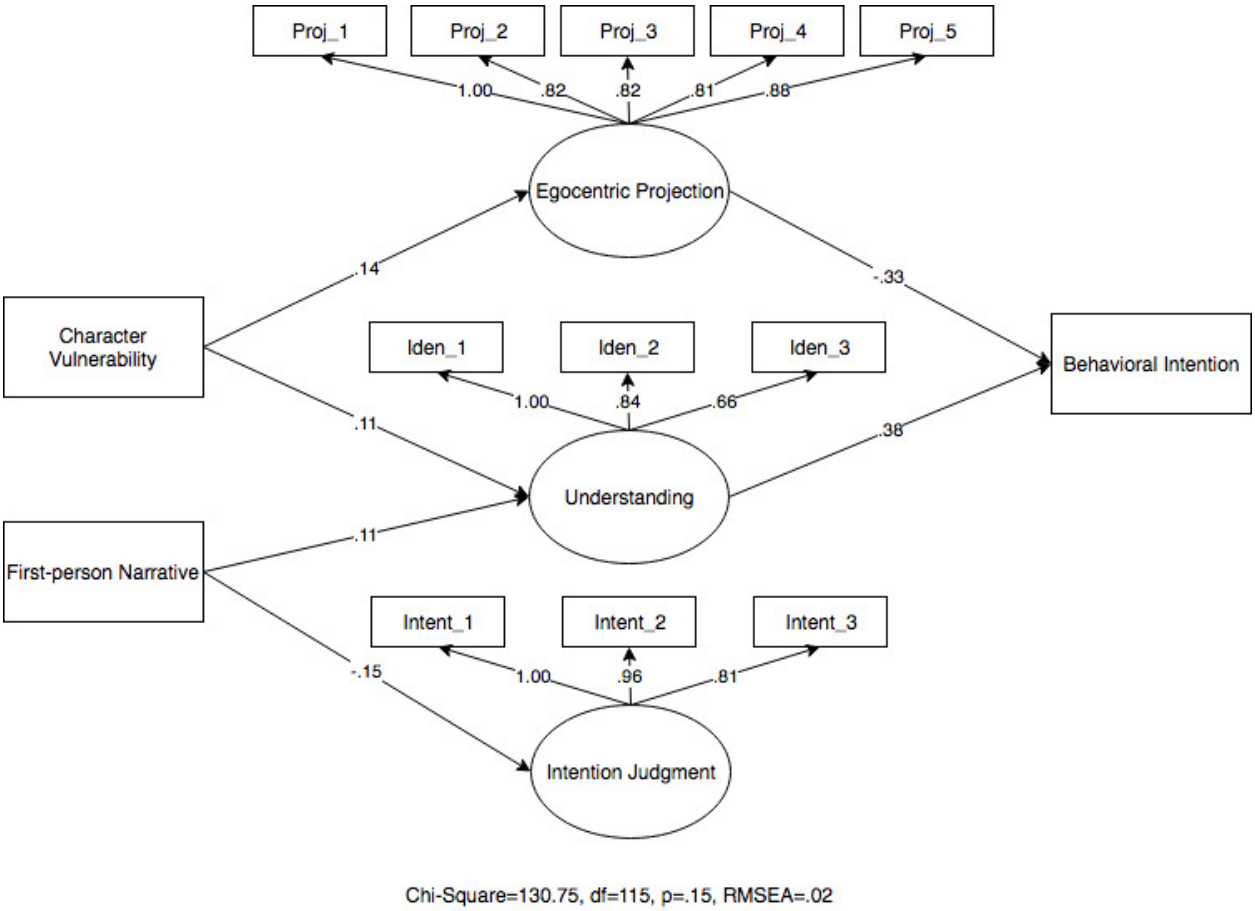

Figure 7. Standardized Coefficients of the Revised Structural Regression Model (Study 4)
Note: All path coefficients are statistically significant at $p<.05$ level.

Discussion

Through a confirmatory factor analysis, Study 4 further validated the multi-dimensional measurements of actor-observer perspective. I identified six unique but interrelated dimensions of actor-observer perspective: egocentric projection, understanding from the character's perspective, external attribution, internal attribution, intention judgment, and capability explanations. Theoretically, people taking an actor's perspective taking have higher levels of

egocentric projection, understanding from the character's perspective, external attribution, and capability explanations; people taking an observer's perspective have higher levels of internal attribution and intention judgment. Consistently with this theoretical framework, Study 4 found that dimensions of egocentric projection, understanding from the character's perspective, external attribution and capability explanations were positively correlated, representing an actor's perspective; and external attribution, intention judgment and were positively correlated, representing an observer's perspective. The significant but low level of correlation between external attributions and internal attributions is probably because both of them measure how audience members make causal attributions of the character's behaviors although they indicate two different ways of understanding story characters. An unexpected result is that capability explanations and internal attributions were strongly correlated. One possible explanation is that characters' skills can also be interpreted as their intrinsic features. Although actors tend to explain their behaviors by abilities, observers may also be likely to identify these abilities and perceive them as the prerequisites to perform a behavior, especially for intentional behaviors.

Study 4 also tested the effects of first-person narratives and character vulnerability on audience's perspective taking. Telling the story from the first-person perspective increases people's understanding of the story from the character's perspective and makes people more likely to judge the character's behaviors as unintentional, compared to third-person narratives. Exposure to highly vulnerable characters increases both egocentric projection onto the character and understanding from the character's perspective. Although egocentric projection and understanding the character's perspective are closely-related dimensions under the actor's perspective taking, and both of them are influenced by character vulnerability, their impacts on persuasive outcomes are different. Understanding the character's perspective increases

audience's intentions to behave in a way that is consistent with the story's persuasive intent. However, egocentrically projecting one's mental states onto characters reduced audience's behavioral intentions to follow what is suggested by the story. These results suggest actor and observer's perspective taking is a general distinction between how people understand story characters. There are still some nuanced differences regarding how people take an actor's or observer's perspective. I distinguished them by identifying the sub-dimensions of the scales. Research is encouraged to further investigate the different ways of taking an actor's or an observer's perspective and identify their unique consequences.

Chapter 5: General Discussion

This dissertation conceptualizes and operationalizes multi-dimensional measurements of actor-observer perspective in narrative processing. Taking a social cognitive approach, I propose that the actor-observer distinction in perceiving social events may also apply to story processing. Taking an actor's perspective taking is conceptualized as simulating story events from the perspective of an actor actively participating in the behavior; taking an observer's perspective is conceptualized as simulating the story events as an onlooker who observes the character's behaviors and maintains a separate self-identify from the character. Study 1 and Study 2 showed that the morality of a story character influenced how people understand the character's mental states and behaviors. People tend to take an actor's perspective when interpreting moral characters compared to immoral characters, indicated by higher levels of egocentric projection and identification, closer attention to unintentional behaviors, and providing more mechanical causes to explain these behaviors. Based on these results, Study 3 and Study 4 further developed the six-dimensional actor-observer perspective scales, composed of egocentric projection, understanding from a character's perspective, intention judgment, internal attribution, external attribution, and capability explanations. Study 4 also examined the effects of actor-observer perspective on persuasion and found that egocentric projection decreased whereas understanding from the character's perspective increased audience members' behavioral intention. Below I discuss the theoretical and practical implications of the scales and the studies for understanding narrative processing and persuasion, followed by limitations and future directions of research.

Theoretical and Practical Implications

Existing studies of narrative mainly focused on concepts of transportation, identification, and empathy, which nicely explained how audience members engage with the overall story or

the specific characters. But none of them fully capture how audience members infer mental states of the story character. The current research examines narrative processing from a social cognitive approach and conceptualizes that there are two ways that an audience member interprets a story characters' mind—an actor's perspective taking and an observer's perspective taking. Actor/observer perspective taking varies on six dimensions: egocentric projection, understanding from a character's perspective, intention judgment, internal attribution, external attribution, and capability explanations. Audience members taking an actor's perspective have greater egocentric projection, understanding from a character's perspective, and explain story character's behaviors with more external and capability factors. Audience members taking an observer's perspective focus more on the story character's intentional behaviors and make more internal attributions. This dissertation focuses on the nature of narrative processing as simulations of social worlds and provides an integrated and refined theoretical framework to deeply understand how audiences interpret story characters and story events. It provides valuable insights to categorize the different strategies of mental inferences.

Pragmatically, the multi-dimensional measurements of actor-observer perspective provide an easy and useful tool to capture how audience members understand story characters. Scholars in social psychology distinguished actor versus observer's views by coding participants' thoughts, which is cumbersome and highly dependent on the context. The multi-dimensional scales developed and validated in this dissertation capture the differences of actor's and observer's perspective taking, are easier to use, and are generalizable to a wide range of story contexts.

One important contribution of this dissertation is that it examines how different features of narratives, such as character morality, character vulnerability and first person narratives,

influence audience's perspective taking. As the first attempt to examine impacts of morality on different forms of perspective taking, this dissertation extends our understanding of how people process moral and immoral characters. Previous studies mainly focused on how morality influences audience member's affective dispositions toward the character, and how moral judgment or disengagement of moral judgment influences the way we enjoy media content. My studies further develop theories of character morality and character vulnerability and explore their roles in inferring mental states of the character and explaining character's behaviors.

This dissertation advances the classic actor-observer asymmetry theory, which manipulated people's physical actor-observer position in real social interaction settings, by examining how character morality influences actor-observer perspective in narrative processing settings. The mental imagination of others' behaviors can be from either an actor's or an observer's perspective. Therefore, research in actor-observer asymmetry should extend its focus from analyzing the role of actor or observer people physically play to a more fundamental psychological process of perspective taking. By identifying character morality, character vulnerability, and first-person narratives as important factors that motivate people to take an actor's or observer's perspective, the current research provides some empirical evidence to articulate this basic motivational mechanism behind actor-observer asymmetry.

The current studies also find that actor-observer perspective plays a role in influencing persuasive outcomes in the health persuasion context. Taking an actor's perspective affects audience's intention to behave consistently with what is advocated in the message—egocentric projection decreased whereas understanding from the character's perspective increased story-consistent behavioral intention. Taking an observer's perspective did not significantly influence audience's behavioral intention. It is worth noting that even within actor's perspective taking,

there are some differences between whether people put themselves in the situation and project one's own thoughts and feelings onto the character, or understand the story events from the character's perspective. Although both ways view the event from an actor's perspective, the direction of influence differs. Egocentric projection focuses on the self, using one's own mind to influence the interpretation of the character's mental states; whereas understanding focuses on the character, simulating the character's mental activities may influence one's own mind. This conceptual difference is supported by the finding that egocentric projection and understanding the character's perspective yield opposite results on behavioral intentions. Study 4 found that egocentric projection reduced people's intention to prepare food safely whereas understanding from the character's perspective enhanced that intention. It is an important finding for health practitioners and message designers as egocentrically projecting oneself onto the story character could be detrimental to health persuasion. One possibility is that putting the self as an actor in story scenarios, especially for events with negative consequences, may induce resistance. This is particularly the case when audience members have engaged in similar risky behaviors in the past (Zhou & Shapiro, 2017; Kim & Shapiro, 2016). Cautions should be taken when designing health-related persuasive messages to avoid audience's resistance caused by processing the message egocentrically. It may also worth exploring whether it is reasonable to conceptualize egocentric projection, understanding from another person's perspective, and observer's perspective as three distinct ways of processing story characters.

Limitations

This research also suffers from several limitations. First, although results from the four studies show that character morality, first person accounts, and character vulnerability influenced how people take an actor or an observer's perspective in processing stories, the actor's or

observer's perspective was measured not manipulated. To test our notion that egocentric projection, understanding from the character's perspective, and behavioral explanations are the indicators of which perspective people take during narrative processing, a more direct manipulation of actor-observer perspective could be employed. For example, researchers could explicitly instruct subjects to imagine self as an actor subjectively participating in the events or as an observer maintaining objective about the events. However, these kinds of conscious manipulations may not completely represent or induce the unconscious mental inferencing processes. Further studies may seek for more direct and natural manipulations of actor-observer perspective.

Second, more effort should be spent to explain the inconsistency between my results and the folk-conceptual theory's hypotheses about asymmetries in explaining intentional behaviors. In Study 4, subjective reason explanations were completely removed from the scale because of cross-loading issues. According to folk-conceptual theory, at a more nuanced level, actors and observers further show a belief-desire asymmetry for reason explanations. It is suggested that actors offer more belief reasons while observers offer more desire reasons, because beliefs are more idiosyncratically held while desire reasons can be easily inferred from general social norms and cultural practices (Bruner, 1990; Malle, 2005). Therefore, it is reasonable that subjective reason explanations are loaded under multiple dimensions, indicating both actor's and observer's perspective taking. Particular attention should be devoted to developing measures that distinguish subjective reason explanations at a more nuanced level. Further categorizing subjective reason explanations into desires, beliefs and valuing may provide some insights for addressing the theoretical and empirical inconsistencies and refining the scales.

Third, to enhance the discriminant validity of actor-observer perspective scales, future studies are also encouraged to test whether they can be differentiated from other conceptualizations and measures of audience involvement in a story, such as Busselle and Bilandzic's (2009) narrative engagement scale, and Cohen's (2001) identification scale. While most items or dimensions of the narrative engagement scale focus on audience members' overall narrative experience, the actor-observer perspective measures emphasize how audience members understand and engage with specific characters. It would be helpful to articulate the differences and the connections between these concepts.

Fourth, actor's and observer's perspective taking are not mutually exclusive processes. Audience members may switch between the actor's and observer's perspective while processing a story. Usually, one perspective is more dominant than the other perspective. However, both perspectives may take place simultaneously. Thus, it makes more sense to treat them as two distinct ways of understanding characters rather than two extremes on one single scale.

Based on the results of confirmatory factor analysis in Study 4, actor's perspective was indicated by higher levels of egocentric projection, understanding from the character's perspective, external attribution, and capability explanations. And these four elements were positively correlated. Observer's perspective was indicated by higher levels of internal attribution and intention judgment. And these two elements were positively correlated. The elements under actor's and observer's perspective were not negatively related, further indicating that actor's and observer's perspective are not mutually exclusive. In fact, external attribution and internal attribution, capability explanations and internal attribution are positively correlated. These results can be explained by the shared theoretical foundations of external/internal attribution, both rooted in the attribution theory. The close relationship between capability and

internal judgment is probably because both people's internal motives and the capability of performing an action are key sources for intentionality judgment (Malle, Moses, & Baldwin, 2001). Further studies are encouraged to explicate the theoretical relations among the six elements.

Future Directions

Besides first-person narratives, morality and vulnerability of the story character, other narrative features, such as the nature of the story event, or message frames may also be the potential predictors of whether people take an actor's or an observer's perspective. Additionally, effects of mental capability and cultural difference on actor-observer perspective are worth exploring in future studies. The conceptualization and operationalization of actor-observer perspective proposed in this dissertation may also have the potential to be applied in other contexts, such as virtual reality. In the following part, I would like to make some specific suggestions for the future direction of research on actor-observer perspective in narrative processing.

Nature of the event. The causal relationship between actor-observer perspective and concrete-abstract mental construal of events is bi-directional (Libby, Shaeffer, & Eibach, 2009). A number of factors regarding the nature of the event may influence audience member's mental construal of this event and further influence actor-observer perspective, including (1) whether a story describes a social event that involves interactions with different people or describes an event completed by oneself that only involves interactions with objects, (2) whether the event is perceived close to or distant from the audience, and (3) whether the audience members are familiar with the events. Social events are associated with high abstract mental whereas individual-oriented events are associated with low concrete mental construal (Iyengar, 1991).

People perceive temporal and physically proximal events as psychologically closer to them, thus are more motivated to simulate these close events with more sensorial and contextual details than distant events (D'Argembeau & Van der Linden, 2004; 2007). The higher level of sensations and emotions (as opposed to objective facts) corresponds to the actor's perspective taking (Eich Nelson, Leghari, & Handy, 2009; Nigro & Neisser, 1983), leading to a stronger feeling of re-experiencing or pre-experiencing of the events. Additionally, processing events that people are familiar with or have the expertise of induces low mental construal with greater detail-oriented and local perception than unfamiliar events (Förster, 2009). Therefore, it is reasonable to predict that processing stories of individual, temporally or geographically close, and familiar events may lead to actor's perspective taking whereas processing stories of social, temporally or geographically distant, and unfamiliar events may lead to observer's perspective taking. Further research could empirically test these hypotheses.

Message Frame. Message frame refers to the emphasis of a message—whether on the positive or the negative consequences of adopting or failing to adopt a particular behavior (Rothman & Salovey, 1997). Two statements that are objectively equivalent in meaning may lead to different perceptions of the behavior depending on whether the statement focuses on the negative (or loss) or the positive (or gain) aspect of the same behavioral outcome (Kahneman & Tversky, 1979). Different narrative frames direct people to focus on different aspects of the described event as well as different ways of thinking the character's behaviors. Although there is no direct evidence for its impact on actor-observer perspective in narrative processing, impacts of event valence have been examined in personal memories. People tend to recall their stressful experiences from an observer's perspective to alleviate the anxiety or other intensive emotions associated with the negative situation (Nigro & Neisser, 1983; Sutin & Robins, 2008) and to face

the problem more rationally. The same mechanism may potentially apply to processing others' experience in stories as well. It is worth exploring whether framing the event positively would motivate audience members to take an actor's perspective whereas framing the event negatively would motivate audiences to take an observer's perspective in narrative processing.

Mental capability. Humans are not born with capacities to read others' minds (Callaghan, 2005; Flavell, 1999; Mossler, Marvin, & Greenberg, 1976). Deficits in developing perspective taking capacities lead to being unable to consider others' thoughts and lack of social skills (Klin, Volkmar, & Sparrow, 1992). Besides personality or biological factors, we should note that situational/contextual factors could also influence people's ability to take perspectives. In understanding narrative characters and events, when the background knowledge about a character is limited or the character's viewpoint is too different from one's own to make sense of, readers lack available mental resources to take the perspective of the character. Another situation is when a reader experiences high cognitive load when processing the narrative, e.g., multitasking, or the message contains too much new information. Under such circumstances, readers could not fully apply their perspective taking skills.

Regardless of whether the lack of capability is caused by dispositional or situational factors, mental capacities can potentially influence whether an individual adopts an actor's or an observer's perspective in processing narrative. However, there are few empirical studies examining how capabilities influence actor-observer perspective. Although some studies speculate actor's perspective is primary for visual imagery, more and more evidence shows that it requires relatively equivalent capacity and mental efforts to take an actor's and an observer's perspective (Brunyé et al., 2011). More efforts are needed to explore the capability factors in influencing actor-observer perspective.

Cultural difference. Westerners in the individualist cultures usually have independent selves and use self as the anchor to perceive others, whereas easterners in the collectivist cultures usually have dependent selves and emphasize more on social cohesion than independence and autonomy (Heine, Lehman, Markus, & Kitayama, 1999; Markus & Kitayama, 1991). When reading others' emotional expressions, people from collective cultures tend to rely on how a generalized other would feel as an observer looking at that expression (Martin & Jones, 2012), while Westerners tend to rely on how themselves would feel as an actor generating that expression (Cohen & Gunz, 2002). In addition, collectivists (e.g., Chinese) were more tuned into another person's perspective and could better distinguish one's own perspective from another's perspective than individualists (e.g., Americans) (Wu & Keysar, 2007). These findings indicate that people from individualist cultures may utilize the strategy of egocentric projection more often to understand another's mental states whereas people from collectivist cultures may more likely to understand another person from that person's perspective or take an observer's perspective. Future research is encouraged to examine cultural difference as a potential factor to influence actor-observer perspective and its implications in cross-cultural communication.

Virtual Reality Context. The current research points out the values as well as some caveats in applying the same psychological mechanisms of interpersonal communication to narrative processing. Contextual factors may play an important role in influencing the extent to which audience could take an actor's role. Further studies could examine whether experiencing stories in an immersive virtual environment with greater presence and realistic interactions may enhance actor's perspective taking to a higher degree than reading narratives.

I conducted a pilot study investigating the effects of visual perspective (first vs. third-person) and avatar identity (self vs. stranger) on behavioral attribution as participants watched a

ball-tossing game in virtual reality and found that third-person perspective (3PP) participants judged avatar behavior to be more intentional and used more personal reasons to explain it than first-person perspective participants (1PP). However, visual perspective did not influence attribution to situational factors. There was a significant interaction with identity and visual perspective, such that 3PP participants who saw a self-avatar were more likely to attribute avatar behavior to ability than 1PP participants with a self-avatar. There was no such difference when the avatar was a stranger. These results partially align with previous work on actor-observer asymmetry in social interactions and narrative processing. Future studies could explain the discrepancies by focusing on participants' perceived control of the avatar's behavior and the extent of immersion into the virtual world.

Conclusion

Taking a social cognitive approach, this dissertation distinguishes two types of perspectives in processing narratives. People taking an actor's perspective actively imagine the self or the character engaging in a behavior, focusing on the environment or objects that are interacting with the actor and merging the self with the character; people taking an observer's perspective views the behavior as an outsider, focusing on the person who carries out actions and making a clear distinction between the self and the observed person. The actor and observer perspectives are associated with differences in how actions are interpreted. People tend to take an actor's perspective when interpreting moral characters compared to immoral characters, showing higher levels of egocentric projection and identification, closer attention to unintentional behaviors, and providing more impersonal causes to explain these behaviors. Processing stories of highly (vs. lower) vulnerable characters or first-person (vs. third-person) narratives also lead to greater actor's perspective.

Through an exploratory factor analysis and a confirmatory factor analysis using stories in different contexts, I developed and validated six-dimensional actor-observer perspective scales to capture how audience members understand story characters. The six dimensions are egocentric projection, understanding from a character's perspective, intention judgment, internal attribution, external attribution, and capability explanations. Using these measurements, I replicated the results regarding the effects of character morality on which perspective people take in narrative processing. The different dimensions of actor-observer perspective also have different impacts on persuasive outcomes. Understanding from the character's perspective increases audience's behavioral intentions to follow what is advocated by the story whereas egocentrically projecting onto the characters decreases such behavioral intentions.

Extending the classic theory of actor-observer asymmetry to narrative processing, this dissertation advances a new approach to understanding how audience members process narrative. Identifying the different perspectives audience members take in interpreting characters provides valuable insights into the nature of narrative processing. Taking the actor's or the observer's perspective is associated with unique mechanisms of mental inference and leads to different communication consequences. Understanding the distinctions between the actor's and the observer's perspective in processing narratives may promote theory development in areas of media psychology, media entertainment, persuasion and mediated communication. The multi-dimensional scales developed and validated in this dissertation also provide an easy and useful tool to capture how audience members understand story characters.

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APPENDIX A: STORY STIMULI IN STUDY 1-3

Moral Alice

Alice, a biology student at Texas Tech University, was walking across campus between classes on a sunny Spring Tuesday. Alice was feeling great. She'd just seen her lab grade in Organic Chemistry and she got an A+.

Alice felt proud. The average grade had been really high in part because Alice had spent hours helping some of the weaker students. Some of them got an excellent grade on the lab. It felt perfect to do right and do well.

As Alice approached Frazier Pavilion near the Masked Rider statue, she noticed a thin man in his mid-30s crouching next to a bicycle. The chain had come off and he was clearly struggling to get the greasy, dirty chain back on, but was failing and making a mess of his clothes. As she got closer, Alice noticed that the man was David Call, the professor of her genetics class. Alice pulled a folding tool out of her backpack and was able to pull the jammed chain out of the derailleur and back where it belonged. Prof. Call smiled and thanked her. "I promise I know more about DNA chains than bicycle chains," he joked.

Immoral Alice

Alice, a biology student at Texas Tech University, was walking across campus between classes on a sunny Spring Tuesday. Alice was feeling great. She'd just seen her lab grade in Organic Chemistry and she got an A+.

Alice felt clever. The average grade had been really low in part because Alice had replaced one of the key lab chemicals with water. Most of the better students couldn't get anything to work and got poor lab grades. Alice put the real chemical back just after the lab report was due. The perfect crime.

As Alice approached Frazier Pavilion near the Masked Rider statue, she noticed a thin man in his mid-30s crouching next to a bicycle. The chain had come off and he was clearly struggling to get the greasy, dirty chain back on, but was failing and making a mess of his clothes. As she got closer, Alice noticed that the man was David Call, the professor of her genetics class. Alice pulled a folding tool out of her backpack and was able to pull the jammed chain out of the derailleur and back where it belonged. Prof. Call smiled and thanked her. "I promise I know more about DNA chains than bicycle chains," he joked.

Moral Steve

Steve was fresh out of the Marketing program at Northwestern University. He was glad to be done with college. He refused to be paid for tutoring several students in a required math class. A friendly Professor had nominated Steve for a public service award. To Steve it was just about doing the right thing.

After graduating Steve got a job with Bennington, McLaughlin and Epstein in Chicago, and was assigned to a team coming up with a marketing plan for a B2B software application. Steve's team leader, Andre, had only been there 6 months longer than Steve. Rhonda, the other member of the team, was a technical wiz but had been passed over for promotion a couple times. She just didn't have the people skills; Steve got along with her, but suspected she was a little autistic. The particular software was useful, ran well, but it was difficult to get customers to understand why they needed it. The team put in 60 hour weeks, and each one contributed pretty equally to the marketing plan they came up with. The whole team was excited about presenting their ideas to their boss, Mr. Bennington, next Tuesday, and hoped he would give the go ahead to present to the client. Late Friday afternoon, the rest of the team had left the office, when Steve saw Mr. Bennington outside their team room. Bennington came over and asked Steve how things were going. Steve told him briefly about the team's solution to the problem. Bennington was extremely impressed and continued pressing for more information. Bennington loved the solution and said that Steve would be in line for a promotion leading a new team.

Immoral Steve

Steve was fresh out of the Marketing program at Northwestern University. He was glad to be done with college. He had been accused of selling answers for the final exam in a required math class. A friendly Professor smoothed things over, and Steve escaped punishment. To Steve it was all a game anyway. Who cared?

After graduating Steve got a job with Bennington, McLaughlin and Epstein in Chicago, and was assigned to a team coming up with a marketing plan for a B2B software application. Steve's team leader, Andre, had only been there 6 months longer than Steve. Rhonda, the other member of the team, was a technical wiz but had been passed over for promotion a couple times. She just didn't have the people skills; Steve got along with her, but suspected she was a little autistic. The particular software was useful, ran well, but it was difficult to get customers to understand why they needed it. The team put in 60 hour weeks, and each one contributed pretty equally to the marketing plan they came up with. The whole team was excited about presenting their ideas to their boss, Mr. Bennington, next Tuesday, and hoped he would give the go ahead to present to the client. Late Friday afternoon, the rest of the team had left the office, when Steve saw Mr. Bennington outside their team room. Bennington came over and asked Steve how things were going. Steve told him briefly about the team's solution to the problem. Bennington was extremely impressed and continued pressing for more information. Bennington loved the solution and said that Steve would be in line for a promotion leading a new team.

APPENDIX B: STORY STIMULI IN STUDY 4

Low vulnerability-self

My family was having one of those holiday family dinners where everybody is in the kitchen at once. The main course was a chicken stew, and I was cutting up the raw chicken. My grandmother was doing something in the sink, so I probably wiped my hands on a towel before cutting up some raw vegetables that people ate with a dip while they worked on the meal. I should have washed my hands, I guess. I was 25-years-old, young and healthy. I thought I could afford to be careless.

The meal was very good and everyone had fun—even in a family like ours with a lot of strong opinions.

But just after lunch at work the next day, I started having stomach pain and diarrhea. After several trips to the bathroom, my supervisor sent me home saying I wasn't getting anything done and that I probably had the flu. It kind of felt like that with chills, fever and a headache. When my husband called and said some other family members were sick, I thought people don't usually all come down with the flu at once. By the time my husband came home I was in unbearable pain, was throwing up, and my diarrhea was bloody. He took me to urgent care and the doctor there sent me to the emergency room. When we got there I was so dehydrated the nurses had a hard time getting a needle in a vein for an IV. They gave me an anti-nausea med they give to chemotherapy patients.

I was in the hospital for days. My stomach pain was unbearable. The doctor said I had a salmonella infection, a bacteria that is sometimes on raw chicken and undercooked eggs. I missed a week of work, a week I couldn't afford.

As bad as it was, it could have been worse. Salmonella can be really dangerous for old people. Older people usually have weakened immune systems and are more likely to have things like diabetes and other diseases. Even taking drugs for those diseases can make food poisoning worse.

I guess I never realized how important washing your hands can be.

High vulnerability—self

My family was having one of those holiday family dinners where everybody is in the kitchen at once. The main course was a chicken stew, and I was cutting up the raw chicken. My granddaughter was doing something in the sink, so I probably wiped my hands on a towel before cutting up some raw vegetables that people ate with a dip while they worked on the meal. I should have washed my hands, I guess. I was 72-years-old. I couldn't afford to be careless.

The meal was very good and everyone had fun—even in a family like ours with a lot of strong opinions.

But just after lunch the next day, I started having stomach pain and diarrhea. I volunteer at the senior center on Tuesdays. After several trips to the bathroom, the center director sent me home saying that I probably had the flu. It kind of felt like that with chills, fever and a headache. When my husband called and said some other family members were sick, I thought people don't usually all come down with the flu at once. By the time my husband came home I was in unbearable pain, was throwing up, and my diarrhea was bloody. He took me to urgent care and the doctor there sent me to the emergency room. When we got there I was so dehydrated the nurses had a hard time getting a needle in a vein for an IV. They gave me an anti-nausea med they give to chemotherapy patients.

I was in the hospital for days. My stomach pain was unbearable. The doctor said I had a salmonella infection, a bacteria that is sometimes on raw chicken and undercooked eggs. While Medicare covered a lot, it didn't cover everything, and I can't afford the bills.

The doctors were very worried about me because of my age. As bad as it was, it could have been worse. Salmonella can be really dangerous for old people. Older people usually have weakened immune systems and are more likely to have things like diabetes and other diseases. Even taking drugs for those diseases can make food poisoning worse.

I guess I never realized how important washing your hands can be.

Low vulnerability-other

My family was having one of those holiday family dinners where everybody is in the kitchen at once. The main course was a chicken stew, and I was cutting up the raw chicken. My granddaughter was doing something in the sink, so I probably wiped my hands on a towel before cutting up some raw vegetables that people ate with a dip while they worked on the meal. I should have washed my hands, I guess. My granddaughter was 25-years-old, young and healthy. I thought I could afford to be careless.

The meal was very good and everyone had fun—even in a family like ours with a lot of strong opinions.

But just after lunch at work the next day, my granddaughter called me about having stomach pain and diarrhea. After several trips to the bathroom, her supervisor sent her home saying she wasn't getting anything done and that she probably had the flu. She told me it kind of felt like that with chills, fever and a headache. When my husband called and said some other family members were sick, I thought people don't usually all come down with the flu at once. By the time my husband came home my granddaughter was in unbearable pain, was throwing up, and her diarrhea was bloody. We took her to urgent care and the doctor there sent her to the emergency room. When we got there she was so dehydrated the nurses had a hard time getting a needle in a vein for an IV. They gave her an anti-nausea med they give to chemotherapy patients.

She was in the hospital for days. Her stomach pain was unbearable. The doctor said she had a salmonella infection, a bacteria that is sometimes on raw chicken and undercooked eggs. she missed a week of work, a week she couldn't afford.

As bad as it was, it could have been worse. She was relatively young and healthy. Salmonella can be really dangerous for old people. Older people usually have weakened immune systems and are more likely to have things like diabetes and other diseases. Even taking drugs for those diseases can make food poisoning worse.

I guess I never realized how important washing your hands can be.

High vulnerability—other

My family was having one of those holiday family dinners where everybody is in the kitchen at once. The main course was a chicken stew, and I was cutting up the raw chicken. My grandmother was doing something in the sink, so I probably wiped my hands on a towel before cutting up some raw vegetables that people ate with a dip while they worked on the meal. I should have washed my hands, I guess. My grandmother was 72-years-old. I couldn't afford to be careless.

The meal was very good and everyone had fun—even in a family like ours with a lot of strong opinions.

But just after lunch at work the next day, my grandmother called me about having stomach pain and diarrhea. She volunteers at the senior center on Tuesdays. After several trips to the bathroom, the center director sent her home saying that she probably had the flu. She told me it kind of felt like that with chills, fever and a headache. When my husband called and said some other family members were sick, I thought people don't usually all come down with the flu at once. By the time my husband came home my grandmother was in unbearable pain, was throwing up, and her diarrhea was bloody. We took her to urgent care and the doctor there sent her to the emergency room. When we got there she was so dehydrated the nurses had a hard time getting a needle in a vein for an IV. They gave her an anti-nausea med they give to chemotherapy patients.

My grandmother was in the hospital for days. Her stomach pain was unbearable. The doctor said she had a salmonella infection, a bacteria that is sometimes on raw chicken and undercooked eggs. While Medicare covered a lot, it didn't cover everything, and she can't afford the bills.

The doctors were very worried about her because of her age. As bad as it was, it could have been worse. Salmonella can be really dangerous for old people. Older people usually have weakened immune systems and are more likely to have things like diabetes and other diseases. Even taking drugs for those diseases can make food poisoning worse.

I guess I never realized how important washing your hands can be.